REPORT RESUMES

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THE MEASUREMENT OF THE EFFECTIVENESS OF THE DOCUMENTARY SOUND-FILM AS A SUPPLEMENT IN THE TEACHING OF METHODS TO COLLEGE STUDENTS BEING PREPARED TO TEACH IN THE SECONDARY SCHOOLS.

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THE PREPARATION AND ASSESSMENT OF DOCUMENTARY FILMS FOR USE IN METHODS INSTRUCTION OF COLLEGE STUDENTS WAS REPORTED. FOUR GENERAL SOURCES WERE USED FOR GUIDANCE IN THE SELECTION OF TOPICS FOR THE DOCUMENTARIES. THESE SOURCES INCLUDED COLLEGE TEXTBOOKS, COLLEGE CATALOGS, INTERVIEWS WITH SPECIALISTS, AND STUDENT INTERVIEWS. POSSIBLE TITLES, FILMS, SUBJECT CONTENT, AND GUIDELINES WERE OBTAINED FROM THESE SOURCES. INSTRUCTIONAL FILMS WERE THEN PREPARED AND USED IN METHODS CLASSES. STUDENTS ENROLLED IN THE CLASSES WERE ASSIGNED TO TWO CONTROL GROUPS AND ONE EXPERIMENTAL GROUP. EACH GROUP CONSISTED OF 40 STUDENTS. THE EXPERIMENT WAS CONTINUED DURING TWO FOLLOWING SCHOOL TERMS IN FOUR SUBJECT AREAS--SOCIAL STUDIES, MATHEMATICS, SCIENCE, AND ENGLISH. EVALUATIVE MEASURES WERE DEVELOPED AND ADMINISTERED BEFORE THE USE OF THE FILMS. THESE MEASURES IMPOSED PRE- AND POST-TEST DESIGN. THE AUTHOR CONCLUDED THAT EXPERIMENTAL GROUPS WERE AIDED BY THE FILMS IN AN UNDERSTANDING OF THE TEACHING PROCESSES, ALTHOUGH THE RESULTS WERE NOT STATISTICALLY SIGNIFICANT. FURTHER STUDY WAS SUGGESTED TO DETERMINE THE USEFULNESS OF THESE FILMS FOR A PROGRAM OF INSERVICE REEDUCATION OF TEACHERS IN BASIC TECHNIQUES OF TEACHING. (RS)

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THE MEASUREMENT OF THE EFFECTIVENESS OF THE DOCUMENTARY SOUND-FILM AS A SUPPLEMENT IN THE TEACHING OF METHODS TO COLLEGE STUDENTS BEING PREPARED TO TEACH IN THE SECONDARY SCHOOLS

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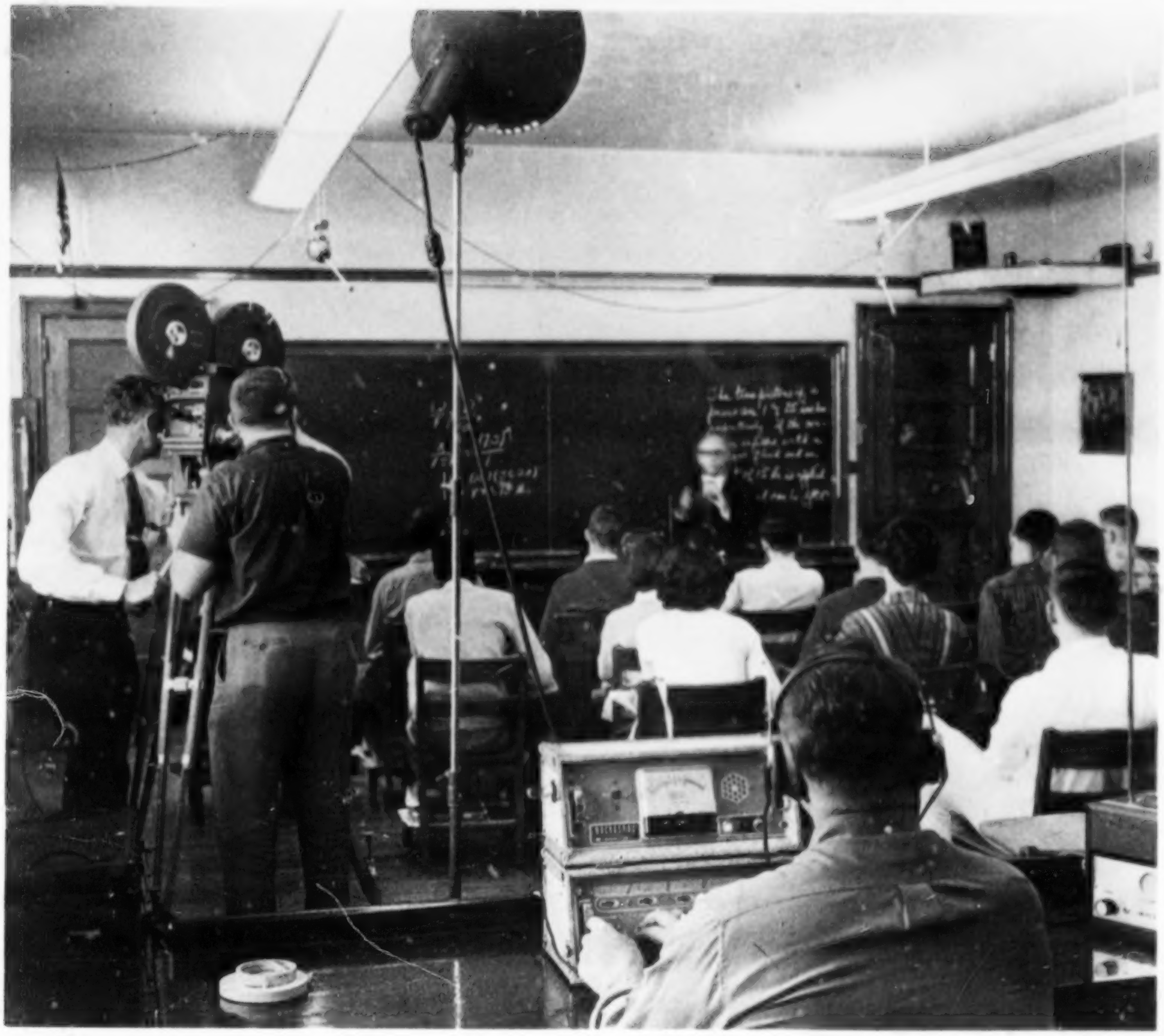


FILMING A CLASSROOM

THE MEASUREMENT OF THE EFFECTIVENESS OF THE DOCUMENTARY SOUND-FILM AS A SUPPLEMENT TO METHODS INSTRUCTION OF COLLEGE STUDENTS BEING PREPARED TO TEACH IN THE SECONDARY SCHOOLS

INTRODUCTION

The Problem

A. In the years ahead institutions which prepare teachers for the secondary schools must discover how to better prepare more teachers. There are more pupils to teach. There is more knowledge to teach. There is, too, more knowledge of how learning takes place and of the techniques of teaching which utilize that knowledge.

Students preparing to teach need to observe in actual practice, the basic theories and methods taught in educational psychology and in methods courses. This cannot be accomplished by observation in actual classrooms because:

(1) the large number of university students who must be served

(2) the need for many observations for each university student

(3) the inability of the university to schedule at any given time enough observations in the schools on the methods and techniques being taught in the university classes at that time

(4) lack of enough teachers in the area public schools who are capable of demonstrating the techniques and methods desired.

From follow-up studies made at The Pennsylvania State University, from classroom experience, and from experience gained in student teaching supervision, the teaching staff in secondary education at The Pennsylvania State University is convinced that the greatest need for improvement in the preparation of secondary school teachers is earlier and more continuous supervised experiences with adolescents, and with teachers in classroom situations.

These experiences are basic to a functional approach to the teaching of students in educational methods and in educational psychology classes.

Documentary sound films are one good method of providing controlled experiences with adolescents, and with good teachers using the basic bread and butter techniques so necessary in learning how to begin to teach.

Documentary sound films are the chief hope for high quality programs which are available when needed, permanent in nature, and within the financial possibilities of most educational institutions which prepare teachers.

B. There are not now available sound films of the type and quality necessary for such teaching.

The Pennsylvania State University faculty now uses the commercial educational sound films available for teaching methods and techniques. They find that these films are of some slight use in introducing the problems of learning, motivation, techniques of teaching, and others, but they believe that the films available are too general and vague in nature and content to be of major use in preparing teachers for the secondary schools.

C. Even in the few places where large university high schools are available, demonstration classes taught by teachers or by student teachers are too often unrealistic. Students, faculty, equipment, class size, are not typical and lack the flexibility necessary for student teachers to get a real life view of the basic methods and techniques of teaching.

D. Uses for sound films.

   (1) In classes of undergraduates preparing to teach.
   (2) For the in-service training of teachers in the high schools of the state who are cooperating with the Pennsylvania State University teacher-education program.
   (3) For the in-service training for all secondary school teachers
   (4) For distribution to all teacher education institutions through The Pennsylvania State University

Audio-Visual Service.

(5) For use in graduate classes in educational methods and in supervision.

Objectives

A. To determine basic skills, attitudes and understandings necessary in the preparation of secondary school teachers.

B. To determine the basic skills, attitudes and understandings which could be most effectively presented on sound film

C. To prepare documentary sound films, each to illustrate a specific skill, attitude, or understanding which was determined to be of great importance in preparing to teach in the public secondary schools.

D. By controlled experimentation determine

(1) the differences in informational learning at the end of the courses at The Pennsylvania State University, in preparation for student teaching, between the students who had been exposed to the experimental sound films and those who had experienced other means of learning the same techniques

(2) The statistical difference in performance at the end of student teaching between students who had been exposed to the experimental sound films and those who had experienced other means of learning the same techniques.

Hypotheses to be Tested

A. That there will be advantages in the documentary film experience of the on-campus methods instruction of prospective secondary school teachers

(1) That viewing documentary films will increase the understanding of the teaching process.

(2) That the observation of documentary films will be considered advantageous by the students when compared to other techniques as used in the methods courses.

B. That in student teaching there will be an advantage in performance, of the basic techniques measured, for those student teachers who experienced the use of documentary films as part of their methods preparation.

Limitations of the Study

Limitations of the study were chiefly those which related to:

(1) The techniques decided upon as basic bread and butter techniques for use by student teachers in their first teaching experience

(2) The quality of the sound films developed for the study - technical quality, quality of the teaching which was filmed, subject matter used as the vehicle for showing the technique

(3) The quality of the teaching in the experimental and control sections of methods classes

(4) The measuring instruments and their use in the experimental and control situations.

(5) The fact that student teachers were placed under varying situations of pupils, teachers, schools, communities and supervisors. However, the student teachers were not identified as members of experimental and control groups and they taught under comparable situations in each group. Since student teachers were organized into groups of 25 persons in a locality under a Penn State supervisor, conditions were approximately comparable for the experimental and for the control students in each group.

PROCEDURE

BASIC TECHNIQUES NEEDED TO BEGIN TO TEACH IN THE SECONDARY SCHOOLS

A. In an effort to provide as broad a base as possible for determining what specific, basic, bread and butter techniques of teaching were needed by students preparing to begin to teach in the secondary schools, the writer attempted to organize the flood of published advice on this problem into a list of workable length and relative simplicity. This project was deemed necessary in order to be able to find authority for deciding upon topics to be used for the documentary films which would demonstrate methods of teaching in the secondary schools.

The problem was stated as follows:

What ideas, methods, techniques, principles, do secondary education students most need to see demonstrated to strengthen their preparation to begin to teach?

Sources Used to Select Topics for Documentaries

Four general sources were used for guidance in the selection of topics for the documentaries:

(1) College textbooks published 1950-1960 in general methods, special methods and educational psychology were surveyed to find out which methods were emphasized

(2) 1960-1961 catalogues were inspected from all colleges and universities in the United States which prepare secondary education teachers. When a professor could be identified who taught a course in general methods, special methods or educational psychology, he was requested to cooperate in the program by answering the questions which were asked in the following letter:

"Dear Professor__________________:

"We at Penn State are attempting to find some method for increasing the observation of our undergraduates in the teaching-learning process.

"If you were instructing secondary education students in undergraduate courses in educational psychology and/or methods of teaching, what methods, techniques and principles of teaching do you think would be most important for them to observe?

"We plan to use the information we receive in preparing a series of documentary sound films of actual high school classes which, we believe, will help us better prepare teachers for the public high schools.

"Will you please list some of the methods, techniques and principles of teaching which you believe would make good subjects for such films? If, in preparing this list you confer with any of your colleagues, please send us their names and positions since we would like to know to whom we are indebted.

"If you are interested, we shall be glad to advise you when these films are available.

"Thank you for your prompt attention to our request".

Very sincerely yours,

Robert B. Patrick
Professor of Education"

One hundred and twenty-one (121) professors from (70) colleges and universities answered the letter and suggested items. They frequently enclosed their published writing on the subject.

(3) The professors at Penn State in secondary education and in educational psychology were interviewed and their advice noted

(4) Penn State students in secondary education who had completed student teaching were asked to answer

the questions asked in the letter to college professors which is printed earlier in this report. Three college professors from other institutions said in their replies that they had consulted their secondary education classes, and had incorporated their advice in the reply to the letter.

Advice from these four sources was collated. Then the project research committee weighed the advice received for its over-all quality as well as for its feasibility of being filmed in a public high school. The committee organized the proposals into the following list of techniques, methods and procedures:

List of Possible Titles for Films

Assignment
Analysis of propaganda
Audio-visual aids in class
Brainstorming
Class without textbook - use classroom library
Classes of different ability level taught same subject lesson
Current events lesson
Controversial issues
Characteristics of adolescents
Creativity
Community resources
Critical thinking
Case study method in science
Cultural approach in modern language
CORE
Classroom diagnosis of achievement levels
Class dramatization of a great event
Demonstration in science using inductive technique
Differentiated assignments
Drill
Democratic classroom

List of Possible Titles for Films (con't)

- Evaluation
- General learning process
- Groups working - panels, committees
- Guidance in classroom (vocational, personal, academic, social)
- Herbart - Morrison steps
- Home Room program
- Inductive-Deductive approach
- Indirect teaching of grammar, punctuation, spelling and vocabulary
- Individualistic perceptions
- Individual differences
- Learning skills - motor and mental
- Learning attitudes
- Learning concepts
- Learning arbitrary associations
- Laboratory method
- Methods of teaching reading for classroom teachers
- Motivation - problem approach
- Projects
- Planning with students
- Pupil-pupil teaching - pyramid project
- Readiness
- Review
- Supervised study
- Transfer
- Teaching values other than subject matter
- Unit-pupil centered, subject centered
- Use of resource materials
- Variety of techniques in single class period

Since, often, several of the techniques listed above could profitably be shown in one film, the following list of films was decided upon.

Proposed List of Documentary Films

(1) A laboratory demonstration in biology - students are led by the teacher to discover a scientific fact
(2) Problem-Solving - Teaching a controversial issue in American History
(3) A unit - subject centered unit in American History
(4) Inductive-deductive-transfer. A lesson in mathematics
(5) a. Teaching a concept - social studies
    b. Teaching a concept - mathematics
    c. Teaching a concept - English
    d. Teaching a concept - science

Proposed List of Documentary Films (con't)

(6) Teaching a mental skill - mathematics
(7) Teaching a motor skill - shorthand
(8) Teaching grammar, spelling and punctuation and vocabulary in a meaningful context - English
(9) Teaching grammar, spelling, punctuation and vocabulary in a meaningful context - French
(10) Review of a unit - biology
(11) Pupil centered unit - Pennsylvania History
(12) Wide use of audio-visual devices - Current events in geography
(13) Skills the classroom teacher uses in the teaching of reading in the secondary school
(14) Contract method - mathematics
(15) Guidance activities of the classroom teacher
(16) Encouraging creativity in the classroom
(17) Brainstorming - Problems of Democracy
(18) Classroom diagnosis of achievement now - mathematics
(19) Classroom dramatization of a great event - History
(20) Problem solving
(21) How to interview a pupil

A list of general classroom procedures was developed and was furnished to each teacher who was filmed. This list follows:

Guide Lines to Good Teaching

Whenever possible all classes should show the following characteristics of good teaching and learning, in addition to the specific central theme or subject to be developed especially for each film:

(1) An introduction to the lesson
(2) Pupils and teacher speak clearly and distinctly
(3) Routinized procedures are evident, including getting class started
(4) Lesson summary
(5) Evaluation - types other than pencil and paper
(6) Pupil activity is evident and their goals are evident
(7) Teacher asks why and how questions when possible
(8) Whenever possible the class lesson is related to today, to other subject areas, to objectives

of the lesson and the course, to previous lessons, to succeeding lessons, to this social setting
(9) Scholarly sources, primary and secondary, are utilized and opportunities are found to evaluate authorities, where possible
(10) Pupils are "ready" for the lesson. The lesson utilizes what we know about the developmental tasks of youth, about motivation
(11) Show by your work with the class that you know your pupils
(12) Be positive in your inter-cultural relations with ideas and people - but do not lean over backwards
(13) Aspirit of friendliness and belonging should prevade the class atmosphere
(14) Pupil-teacher planning should be evident
(15) Don't talk into the blackboard. Don't write at length on the blackboard
(16) Speak in an even but not monotonous tone. Don't "boom" your voice. The sound equipment can't take it.
(17) Good housekeeping is evident - clean blackboard in beginning, neat bulletin boards, orderly chairs, book cases and tables have organized materials on them.
(18) Even in one lesson there should be evidence that you are interested in teaching attitudes and skills and values as well as understandings, and that you foster creativeness on the part of individuals and the group whenever possible
(19) Pupils should be obviously thinking for themselves. You should deliberately look for opportunities to strengthen the pupils' ability to think logically, scientifically and creatively
(20) Bulletin boards have current materials on them. Displays are on the lesson or unit now being studied.
(21) Don't try too hard. If the lesson is too perfect it won't be documentary - at least it will look contrived.

It was hoped that the 30-40 minute films would be useful in the building of understandings, skills and attitudes which were the subject of the films. It was hoped that, in addition, other food for thought would be found in the films which may be, sometimes, more immediately important than the titled objective of the film. These indirect results were hoped for because, as far as possible, the films were documentaries of actual classes in as near natural conditions as possible. This objective of naturalness necessitated some sacrifice in artistry of the films and in sound. It is hoped that these, too, are excellent, but the first consideration was to see and hear a good teacher, teaching students something worth learning in a natural setting, by means of a specific technique or method.

B. PREPARATION OF INSTRUCTIONAL FILMS

Teacher Recruitment

After determining what methods or techniques of teaching should be filmed, the next step consisted of finding school administrators and able teachers who were willing to spend the time and effort needed to get a technique on film.

The members of the Secondary Education Department of The Pennsylvania State University were extremely helpful in suggesting likely school administrators and teachers. They were well acquainted with large numbers of administrators and teachers as a result of their supervision of student teachers in many areas of the Commonwealth. Several professors had worked extensively for many years in Penn State's in-service education program, and many members of the Department could recall numerous undergraduate and graduate students from their own classes who were possible candidates for work in the proposed program. In this manner a start was made. Then too, each school administrator made suggestions of his own for the list and also confirmed or rejected those from his school who were already on the tentative list.

When the list of possible school districts and individual teachers had been organized, the chief investigator, Dr. Robert B. Patrick, and the associate investigator, Dr. Deno Thevaos of the Educational Psychology Department, began a series of visitations. The procedure was as follows:

(1) Meet with the chief administrator of the school district, explain the proposed project, ask for his support. In all cases where a request was made, the support was graciously given

(2) Read to the school administrator and the high school principals involved, the names of teachers who were to be visited and get their suggestions as to emmendations.

(3) Visit teachers for one or more class periods "just to see good teaching". Only when the chief investigator and his associate were convinced that the teacher could successfully teach one of the proposed techniques and only after again conferring with the school administrators, was the teacher invited to teach one of the techniques. No teacher, who was invited to participate in the project, refused.

When each teacher consented to become part of the program, agreement was reached as to the detailed procedure to be followed in teaching the agreed upon technique. The teacher was urged to practice the technique where it applied to the normal situation.

In recruiting teachers for the project, care was taken to provide techniques appropriate for the various subject matter areas in which the secondary education department prepared teachers through its methods classes. Younger and older teachers were used. Men and women teachers took part. Junior High School and Senior High School classes were filmed.

Approximately a month before the class was filmed, the chief investigator visited several class periods taught by each teacher. At this time the teacher taught a "practice lesson" using the technique which was to be the subject of the film. The teacher and the chief investigator conferred on any necessary changes in the details of the method taught. At this time the teacher decided upon the class which should be filmed. The chief investigator then explained to the class the purpose of the filming, asked their permission to use them in the film, and promised to return with the film as soon as possible after it had been processed. No student in any class refused to appear in the film.

Class Preparation For the Filming

In the fall term 1961 teachers in the project were revisited and a shooting schedule was developed. The shooting schedule was organized so that the crew could work on more than one job during the day. This procedure called for a lot of setting up and tearing down of sound and picture equipment but it also cut costs of sustaining a crew in the field.

The project director preceded the camera crew by several days to prepare the teacher and class for the filming. The teacher and the director decided upon the subject matter of the lesson to be filmed. The lesson was the logical "next lesson" and was not practiced with the class. As was stated earlier, the teacher and the class had frequently used the technique to be filmed but the director insisted that class spontaneity as well as the authenticity of the documentary would be spoiled if the class was filmed using rehearsed subject matter for its lesson. During this time the pupils were alerted to the need to speak distinctly and to act as naturally as possible under the circumstances. In the large majority of classes filmed, pupils were used to being observed as part of the student teaching program of The University and exhibited little nervousness during the proceedings. It is believed that the procedure of keeping the pupils informed all along the way and asking for their help in the project, went a long way toward achieveing a natural class situation.

Planning the Lesson with the Teacher

(1) Does the technique fit the subject matter to be used in the lesson. Would a good teacher use this technique with this material.

(2) Is the subject matter important, correct, and in the correct sequence. Is the teacher sure of all the facts. Will the subject matter bear the test of time.

(3) Can the technique be covered carefully within the time limitation of a single period. Can the technique be repeated or reviewed during the single class period.

For most techniques a 50 minute period was adequate to develop the technique carefully and adequately. Concepts, mental skill, review lesson, interview, inductive-deductive lesson, use of teaching materials are examples.

Where it was not possible to adequately show the entire technique in one period the attempt was made to solve the problem by planning with the teacher to begin with (a) review what had been done in previous lessons (b) do as much of the technique as possible in the current lesson and (c) lead the class to project the concluding steps to be taken in the next lesson to complete the technique. Examples are found in the film on problem solving and the three films on creativity. This technique was not used on the films on the unit. Here the films were edited to reduce them to 100 minutes in length in one case and 150 minutes in length in the other.

(4) A review of the guide sheet"Guide Lines to Good Teaching".

Filming Procedure

(1) When the class arrived the first day of the schedule, the room was ready with cameras, sound equipment, lights, drapes, and tape recorders. When the class began the teacher asked the project director to take charge. He introduced the cameraman, who was also crew chief. The cameraman explained to the class the type of equipment they were observing, how it would work, the function of the assistant cameraman. He loaded the camera at this time and answered any questions from the pupils.

The crew chief then introduced the sound man who explained the double system of sound - recorded on the camera film and also on the tape recorder. The tape recorder was noisy so must be placed outside when in operation. He asked for the reason drapes were placed in parts of the room not showing on the film and he always received the correct answer. He explained the sound equipment and urged the pupils to speak distinctly and to keep their heads up and not "mumble in their beards".

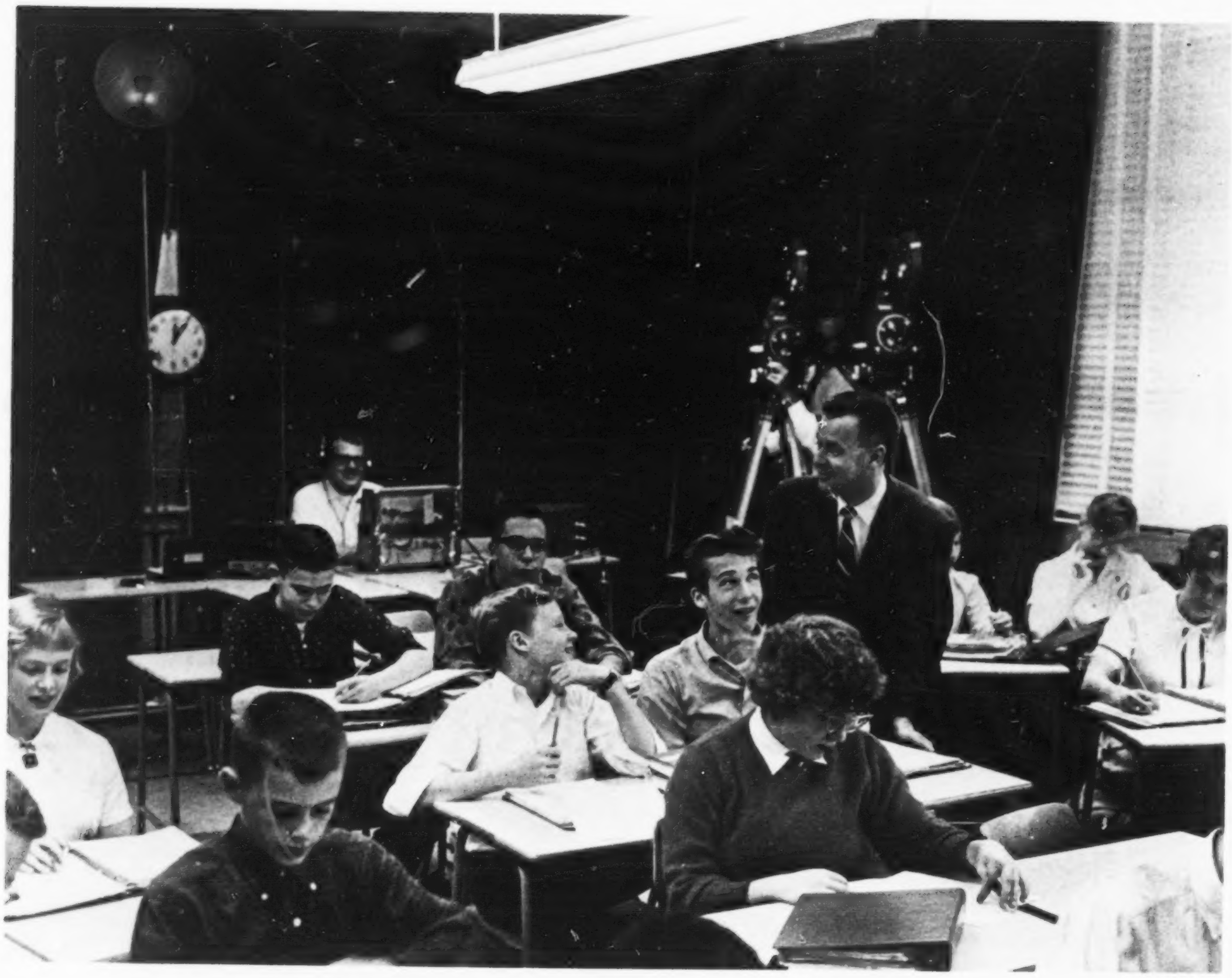
(2) The director then explained to the pupils that the crew would remain in the class for several days taking parts of the class procedure from time to time as the director desired. He stated that probably the class would not know when movies were actually being taken, and surely would not know what parts of films actually shot would be used, so they were to go on about their regular work and let the crew proceed.

(3) Actually, the crew and the teacher planned that the second day of the schedule would be used as the documentary of the entire class period, and the teacher planned the work accordingly. The second day was used for actual filming because experience had taught the director that, generally, pupils and teacher were most ready then. Several times, early in the schedule, when the third day had been used for filming it seemed to all parties concerned that the second day had been a little sharper in teacher leadership and class response. Then too, if the second day did not come up to expectations, the pupils were not made tense by an unplanned extension of the program. After the filming, before the equipment was removed, the sound tape was played back to decide if the sound was acceptable. In one or two cases this procedure encouraged the director to refilm the class a third day.

(4) Later in this report, a detailed list of equipment will be given. There will, also, be a discussion of some of the problems, procedures and lessons learned in filming pupils in classrooms in actual school situations.

(5) The director promised the teacher and pupils filmed that he would return with the film as soon as it was processed so that they could see the results of their work. In all cases the promise was kept.

Sometimes, when the films were returned to the schools, they were shown, also, to the School Board, to teachers of the department where the film was made, and to the P.T.A.



AT WORK ON A DOCUMENTARY

The above photograph is included in order to show the position of some of the major equipment. Note the alpaca drapes on the walls, the clock to keep the teacher informed on the time remaining, some of the sound equipment, the two cameras, and the floodlight.

List of Films Completed

1.	Name	Subject	Grade	Length
1.	Inductive-Deductive Method in Laboratory Demonstration	Biology	10 (2 reels)	60 min.
2.	Problem Solving	Social Studies	12	40 "
3.	Subject Centered Unit	American History	12	100 "
4.	Inductive-Deductive Method	Mathematics	9	40 "
5.	Teaching a Concept	Social Studies	11	40 "
6.	Teaching a Concept	Mathematics	11	40 "
7.	Teaching a Motor Skill	Shorthand	11 (2 reels)	50 "
8.	Teaching a Concept	Physics	12	35 "
9.	Teaching a Mental Skill	Mathematics	12	40 "
10.	Diagnosis of Learning Difficulties and Remedial Teaching	English	12	40 "
11.	Teaching Fundamentals in a Meaningful Context	French	12	40"
12.	Creative Imagination	Advanced English	11	40"
13.	Review Lesson	Biology	10	40"
14.	Current Events through Instructional Materials	Geography	8	40 "
15.	Diagnosis of Learning Difficulties and Remedial Learning	Mathematics	8	35 "
16.	The 1960 Presidential Election	English	11	30"
17.	Teaching a Concept	English	11	30 "
18.	Some contributions of the Classroom Teacher to Guidance	Guidance	H.S.	50"

List of Films Completed (con't)

Name	Subject	Grade	Length
19. Teaching a Pupil-Centered Unit	Jr. High School Problems	9 (2 reels)	150 min.
20. Creativity - The Project Approach	English	12	35 "
21. Creative Writing	English	12	35"
22. Teaching of Reading in the Secondary School	H.S.	H.S. (2 reels)	60 "
23. Teaching a Concept	Mathematics	10 Film 2	20"
24. How to Interview a Pupil	H.S.	H.S.	20"

Skills Gained in the Production of Classroom Documentaries

The filming of the actual classroom situations was truly a learning process. The technical work was under the direction of The Division of Academic Research and Services of The Pennsylvania State University. Its permanent motion picture crew of three men was responsible for the field work and the editing of the films. The crew chief and head cameraman was Mr. Delmar Duvall, the sound man was, Mr. Gerald Hutchison and the assistant cameramen were Mr. John Henderson and later Mr. Calvin Conklin.

The fact that, for the first time with the knowledge of the writer, whole classrooms of pupils and their teacher can be seen and heard on film in actual working classrooms, in actual public schools, for whole class periods, was largely due to the ingenuity, patience, and skill of the technical crew which worked on this project.

In filming such documentaries it should be realized that everything that takes place in the classroom cannot be recorded. Both cameraman and sound man must make judgements on what and where to focus in the classroom and must also attempt to anticipate teacher and pupil activities. Sometimes they make mistakes and focus on less important activities. Depending upon a wide-angle lens is not the answer because film medium will not show enough detail in an overview and will not sustain high interest, or even convey necessary information such as chalkboard writing, details of pictures or student note books or teacher demonstrations.

Procedure and Equipment Used for Preparing a Classroom For Filming a Scene

(1) Classroom Schedule

The classroom was scheduled for use before and after school and for the class periods before and after the period used for the filming.

When possible, basic preparation was carried out before and after the regular school day. This meant that the school's organization was disturbed as little as possible.

The classroom was needed for the period before the filming in order to prepare sound and camera equipment and to be sure that the classroom was ready so that the shooting could begin as teacher and pupils entered.

The classroom was needed for the period after the filming in order to secure valuable and delicate equipment or if finished, to dismantle equipment.

(2) Classroom Preparation

(a) Alpaca drapes were installed on wall areas not seen in the films.

(b) Location and erection of microphones, tape recorder and other sound equipment.

(c) Location and erection of cameras. Will one or two cameras be used. If more than one camera is needed, will they be used alternately, parallel from two locations, in tandem, or supplementarily.

(d) Location and erection of lights

(e) Erection of clock for teacher to judge time remaining in period.

(f) Construction of a chart of distances from the camera for all parts of the room with probable focus points noted, to be used by the assistant cameraman in keeping lens in focus. He must know and understand zoom positions because of viewing angle.

(g) The teacher was fitted with a microphone appropriate to room conditions.

(h) Check room for squeaky chairs and tables. Arrange window blinds to even illumination. Clean the chalk board.

(i) Be sure to supply soft chalk for chalkboard.

Things to Remember in and Outside the Room which Will Influence the Quality of the Production

(a) Noise from classes overhead or next door

(b) Band practice or shop noises nearby

(c) Unusual schedule of classes which may cause corridor noises when not expected

(d) Signal bells. The Public Address System, noisy clock, classroom blowers for heat and ventilation, the hum of old or malfunctioning neon lights, the slam of steel lockers.

(e) Short wave radio or electronic laboratory in the building which must be stopped

(f) Move school busses which are warming up within half a block of the classroom.

(g) Police corridor so that no one enters the room from outside.

4. Equipment Used in the Classroom Filming

(a) Two cameras - Auricon 1200 with zoom lenses

(b) Three magazines

(c) Two tripods Auricon

(d) One magnasync 602 Type V Recorder - 1600 feet capacity

(e) Two microphones - elctro voice 642. These microphones have a narrow receptance angle and will pick up sound 2 to 3 times the distance conventional mikes are capable of doing. This made the project feasible without extensive wiring of many normal mikes, throughout the classroom. With the #642 the technicians were able to successfully record voices from as far as 30 feet.

(f) One Sony wireless mike CRT4. This was concealed on the teacher in all cases where there was no electrical interference. In a few instances a conventional lavalier type microphone was necessary because of radio interference.

(g) One Gates Level Devil Expander Compressor (L.D.). To expand the volume of weaker voices and compress the volume of the stronger voices in order to have a more evenly modulated sound track. This did not replace the sound man in his function of monitoring and microphone selection but supplemented his work. The L.D. was used either on location during the actual filming or in the studio during the re-recording of the sound track. Whether its best use is in the classroom or in the studio is a matter for further investigation.

(h) One Magnasync G 924 Mixer, four position. The mixer was necessary to use multiple mikes.

(i) Two 1000 watt floodlights. Merely to raise general illumination of the classroom. Used near the cameras, often pointed toward the ceiling.

(j) Ten pieces of alpaca cloth, 50" x 10'. Used for drapes to cover the wall areas of the room which would not appear in the film. The voice intelligibility everywhere in the room was greatly improved by the addition of the drapes. Many teachers remarked about the increased ease with which they were able to communicate when the drapes were up.

(k) Triple x reverse film

(l) Magnetic film

(m) Clap sticks

(n) Station wagon

C. USE OF FILMS IN METHODS CLASSES

Schedule of Classes Taught in the Project at The Pennsylvania State University

In the spring term 1961 the teaching part of the project began. All 120 students scheduled in general educational methods classes were brought to one location for their first class period. Their names were taken and an alphabetical roll developed. Then the students were randomly selected to be placed in classes as follows:

Schedule of Classes

Spring 1961	Control	Experimental
	40 students (teacher B) 40 Students (teacher C)	40 Students(Teacher A)

LANGUAGE LABORATORY THROUGH THE WINDOWS

CREW CHIEF AND CAMERA

SOUND MAN AND SOME

EQUIPMENT

The associate for research observed in succession each of the three classes in the spring term. He noted that all classes were well organized and had a high level of student participation. This observation of the research associate aided in the development of terminal evaluation instruments.

In the fall 1961 and winter 1962 terms, experimental and control classes in special methods courses in each of four subject matter areas (social studies, mathematics, science and English) continued the experiment. The same teachers were used in the fall and winter terms in each of the subject matter areas in order that each teacher would teach both a control class and an experimental class.

Schedule of Classes

	Control	Experimental
Fall 1961	Social Studies Methods Mathematics Methods	English Methods
	Science Methods #1	Science Methods #2
Winter 1962	English Methods Science Methods #2	Social Studies Mathematics Methods Science Methods #1

In the fall and winter terms only one class each was scheduled in methods of teaching English, Social Studies and Mathematics. Two classes each term were scheduled in methods of teaching Science.

D.PREPARING THE EVALUATIVE INSTRUMENTS

(1) For use in measuring responses of the experimental and control classes in methods classes.

Three evaluative instruments were made ready for the project before the beginning of classroom use of films. They were:

(a) Your Appraisal of High School Teaching as a Profession (attitude measure)
(b) Understanding the Teaching Processes in the Secondary School (multiple choice test on methods)
(c) Psychology of Education in the Secondary School (multiple choice test on psychological background)

Pilot Study

The beginning of the fall semester in September 1960, the three measures were administered to 215 students in educational psychology classes and to 111 students in secondary education methods classes. Following this initial pilot testing program an item analysis was completed to check on the validity of the specific items in the three measures used.

At the end of the fall semester in January 1961, the same Three evaluative instruments were administered to the same students in educational psychology and educational methods classes. Although no experimental class was taught, the tests were given and the results noted in order to determine if the tests had validity and reliability. The gains made in

The course and appropriate relationships of mean to standard deviation indicated validity in each test.

Net Conclusion: The tests can be used in this area as demonstrated by significant gains made during the semester. The fact that the means are about 50% of total maximum score indicates wide range measures that can be used on experimental groups. The reliabilities should be adequate for group measurements. r_{tt}est. .80 to.95. The data table for this conclusion follows on the next page.

In the spring semester 1961 the same three tests were administered as pre and post tests, to one class in Secondary Education General Methods using the documentary films, called the experimental class and to two classes not using the documentary films, called the control classes. All three classes used approximately equal time and the same basic subject matter material on each area of study. The experimental class utilized its observation time by seeing the films while the control classes observed high school classes in the "inner Circle" schools of the area.

Table 1

ANALYSIS OF GAINS MADE BY STUDENTS IN PILOT GROUPS ON THREE TESTS AT THE PENNSYLVANIA STATE UNIVERSITY.

FALL 1960-61

(assuming no correlation between testing)
(level of significance would likely be higher if groups were correlated)

TEST	GROUP		PRE-TEST"	FINAL TEST	TEST GAINS
Education Psychology 109 items	Sec. 4	N	83	83	
		M	48.66	55.72	7.06**
		S.D.	7.41	7.95	
"	Sec. 2	N	145	141	
		M	48.32	54.13	5.81**
		S.D.	7.01	7.36	
Appraisal of High School Teaching 72 items	#1	N	46	48	
		M	36.17	39.96	3.79**
		S.D.	5.87	6.63	
"	#2	N	29	33	
		M	36.55	37.24	.69
		S.D.	6.11	6.65	
"	#3	N	36	38	
		M	32.95	36.21	3.26*
		S.D.	6.54	5.19	
Understanding the Teaching Processes 88 items	#1	N	46	46	
		M	38.78	44.48	5.70**
		S.D.	6.12	5.77	
"	#2	N	29	30	
		M	40.79	43.77	2.98*
		S.D.	5.14	6.47	
"	#3	N	36	35	
		M	37.81	44.52	6.71**
		S.D.	4.63	5.53	

** Significant gain at .01 level
* " " " .05 level

Correlations were made on pre and post scores of three representative groups on one test each.

The attitude measure $r_{pre,post} = .61$

The methods of teaching test $r_{pre,post} = .17$

The educational psychology measure $r_{pre,post} = .54$

When two of the measures, the Educational Psychology Test and the Appraisal of High School Teaching as a Profession, were used as pre and post tests for the spring 1961 experimental and control groups, the results indicated that all groups made significant gains on these measures, Since there was no significant difference in results between the experimental and control groups the measures were not used in the fall and winter classes. The third test Understanding The Teaching Processes did show differences between the experimental and control groups. It continued to be used throughout the study (see appendix).

During the observation of the general methods classes by the research associate, it appeared that other class content, than that measured by the three instruments previously prepared, was related to the documentary films.

(1) One instrument, Your Use of Instructional Aids was prepared to find out the understanding of the use of audio-visual aids equipment by the students. No differences were found among the three groups of students

in their understanding of the use of instructional aids. All groups had some instruction in the use of instructional aids. This instrument was not used further in the study.

(2) An instrument entitled Evaluation of A-V and related observations was designed to find, in the students' opinion, the topics which they felt were adequately presented in class, either by direct observation or by use of the documentary films. This observation evaluation sheet clearly showed a difference among the groups, following chi square analysis. This instrument was used in subsequent fall and winter methods classes (see appendix).

(3) An Essay Examination was prepared that the students would have the opprotunity to give free response on matters dealing with methods and thus reveal, in less structured situations, their insight about teaching methods. The Essay section was scored for four independent scores:

(a) Accuracy of statements about methods
(b) stated content revealing methods understanding
(c) content used which might indicate creativity in teaching
(d) content indicating a selection of critical points in the teaching process.

In two of the four measures in this test there was a noticeable difference among the groups. This instrument

Was used in subsequent fall and winter methods classes (see appendix).

The basic question to be answered in this research project was Is it possible to measure the difference in the amount of use, in the student teaching experience, that student teachers make of certain specified techniques, between those who have seen sound films of the techniques of teaching and those who have spent equal amounts of time in other means of studying the same techniques?

To answer the above question three measures of performance were used by the investigators.

(a) A major check-list was prepared - Check Form for Evaluation of Student Teachers - 1961-1962 (see appendix). This instrument included questions on each of the techniques used in the films. It was constructed in enough detail to evaluate the use of the specific parts of each technique as well as to measure the general over-all quality of the use of the technique.

The check-list was constructed to become the basis for a one-half hour structured interview with the cooperating teacher (master teacher) of each student teacher. The interview took place during the last two weeks of the 10 week student teaching experience. Only the chief investigator and the associate investigator for research interviewed the cooperating teachers. These interviews were not begun until practice interviews with both interviewers present had developed a set of common questions and common examples of techniques to use in the interviews with the cooperating teachers, in order to increase the validity and reliability of the instrument.

Subsequent use of the form with its mean and standard deviation gives a high Kuder-Richardson coefficient of reliability, .956 when based on possible range of scores.

In addition, each college supervisor of student teachers rated the student teadhers under his control using the evaluation instrument. This afforded an independent observation useful as a check on results obtained from interview procedure.

(b) A one page supplementary check sheet, for structuring the interview with the cooperating teacher was constructed. This check sheet attempted to evaluate some of the more specific techniques shown in the films It was called "Supplementary Record of Student Teaching Achievement" (see appendix)

(c) Each lesson plan of every student teacher was read by the project director. The lesson plans were evaluated on the basis of the frequency of mention or use of techniques which were present in any one of the films.

It is to be recalled that these techniques were basic to the teaching process. Therefore, this study really indicates a measure of teaching preparedness in general as well as evidence of film observation.

The research staff used the three techniques explained above as the measurements of actual performance of student teachers in a real work situation.

Student teachers did not know that their performance in student teaching was being measured as a part of a research project which used films in methods instruction.

The cooperating teachers, the college supervisors and the project staff did not know which student teachers belonged to the experimental group and which belonged to the control group.

Procedure Used for Accomplishing the Measurement of Student Teachers

The following procedure was used in accomplishing the measuring of the performance of the student teachers in student teaching.

(a) A dinner meeting was held with all cooperating teachers and high school principals in each student teaching center. At this organization meeting for student teaching in general, the project director and the research associate participated. They explained the need for discovering how well student teachers performed the techniques which they were exposed to in their educational psychology and educational methods courses. They requested the help of the cooperating teachers in this evaluation. The check sheet was shown to them and the interview procedure explained. Each cooperating teacher was then given a 3 page manual explaining each technique he was to look for in his observation of his student teacher. The manual also gave examples of each technique in each subject matter area(see appendix) No mention of a special N.D.E.A. project was made but simply a request for cooperation in evaluating the pre-studdnt teaching program of the university. The cooperating teachers were further informed that these check-sheets were not a method of obtaining a grade for student teachers, or to evaluate the work of the cooperating teacher, but were a method of determining the carry-over from the university instruction in methods and psychology. This "soft sell" was used in an attempt to elminate pressure on the cooperating teacher to coach the student teacher in the techniques.

(b) During the fifth week of student teaching each cooperating teacher was visited by the project director or the research associate for approximately one-half hour.

At this time problems related to the use of the check sheet were discussed. Further examples of what was meant by a concept in mathematics or a mental skill in science were given. It is the opinion of the staff that only the inclusion of this step in the procedure made possible a deep and broad evaluation by the cooperating teacher at the end of the student teaching period. At this time the final check sheet was used in a "practice session" or "dry run" and the cooperating teachers were brought to realize the need for careful note taking and detailed observation of the student teachers.

(c) During the ninth or tenth week of student teaching a structured interview was held by the project director or the research associate with each cooperating teacher. The interview was approximately one-half hour in duration. The check sheets, both the major check sheet and the supplementary check sheet, were filled out, by the interviewer as the cooperating teacher answered the questions. Care was taken to schedule the interviewer with the same person he had interviewed at the mid-term of the student teaching period.

(d) Each supervisor of student teachers also filled out, the winter and spring terms, the major check sheet on the student teachers whom he had supervised for the 10 week period.

(e) The student teaching staff collected and filed all student teacher lesson plans. These plans were then delivered to the project director.

The organizing of the dinner with the administrators and cooperating teachers and the scheduling of cooperating teachers with the interviewers, both at the midterm and at the end of the student teaching period, was accomplished by the supervisory student teaching field staff of the University. This service to the project staff saved coutless time, money and energy.

Procedures for Statistical Analysis

Those measures which were continuous variables on which means and standard deviations could be collated, were analysed by the use of "t" tests for the significance of differences between means.

In those variables where categorical data were involved chi square analyses were used.

The groups were studied at pre and post test time and the many measures used should provide evidence concerning the hypotheses to be tested, as previously mentioned.

RESULTS OF THE STUDY

HYPOTHESES

The direct results of the research project are presented under the hypothese which were proposed at the beginning of the study. They are:

A. That there will be advantages in the documentary film experience of the on-campus methods instruction of prospective secondary school teachers.
   1. That viewing documentary films will increase The understanding of the Teaching Process.
   2. That the observation of documentary films will be considered advantageous by the students when compared to other techniques used in the methods courses.

B. That in student teaching there will be an advantage in performance, of the basic techniques measured for those student teachers who experienced the use of documentary films as part of their methods preparation.

Hypothesis A - Results From Evaluation of Methods Classes Conducted at The Pennsylvania State University Over a Three Term Period

In the general methods classes of Spring 1961, the one experimental and the two control groups made significant gains on the objective test, "Understanding the Teaching Processes in the Secondary School". The greatest gain during this period was made by the experimental group. It did not quite indicate significant gain over the gains made by the control groups. The content of the test more adequately fitted the content of the general methods course that it did that of the special methods courses. No mean of any subsequent group was as large as the mean of the experimental group in general methods class in the Spring of 1961.

In the special methods groups (Fall 1961 and Winter 1962) one social studies control group and one English methods experimental group made significant gains. In the other 8 groups there were no significant differences.

The students of all classes, at the end of each of the 3 terms, were requested to evaluate the quality of observations made during their methods courses. The experimental group had looked at films, the control groups observed live classes for equivalent amounts of time. In clock hours the time spent by the control groups was longer because of the time spent in arrangements and transportation. The students evaluated 23 observation topics, each on a 7-point scale. This evaluation was voluntary and not part of their grade. In these evaluations at all three periods the experimental groups gave higher quality ratings to more items of observation that did the control groups. In the chi square analysis, both for items and for total judgements, there is superiority giving evidence that the experimental group obtained greater value from the series of film observations that the groups received for their direct observations.

The students were requested to do a structured essay on teaching methods at the end of their methods course. Part of this essay examination was structured around ten methods topics and part was free writing in paragraph form. The preponderance of evidence favoring the experimental group came from the free writing in which the students gave evidence of understanding teaching processes and showed a creative approach to teaching. These are apparently direct results of the film observations.

1.Understanding the Teaching Processes

In the test dealing with "understanding the teaching processes in the secondary schools" the results can be examined in tables 2 and 3.

It is noticed that all groups made a signicant gain in the Spring of 1961 from pre test to post test. The greatest gain was made by the experimental group. This gain, while not significantly greater, t=1.42(significance of difference between mean gains), was twice that of the inferior control group and significantly greater than this group. The gain of the experimental group was greater, though not significantly so, than the gain of the superior control group.

Table 2

DATA ON EXPERIMENTAL AND CONTROL GROUPS
IN CAMPUS METHODS CLASSES, SPRING 1961
UNDERSTANDING THE TEACHING PROCESSES

	Pre-Tests			Post Tests			Gains	t of Gain[2]
Group	N	M	S.D.	N	M	S.D.		
E	40	39.80	5.87	35	47.20	4.81	7.40	5.82**
C_1	42	38.71	5.33	40	44.92	5.48	6.21	4.87**
C_2	39	37.46	5.67	39	41.08	6.23	3.62	2.84**
Control Combined	81	38.12		79	42.95		4.83	3.80**

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2. test for independent samples used N=40

**significant difference at .01 level

All groups made a significant gain in three areas measured by the test, Understanding The Teaching Processes. A "t" test of significance of difference between mean gains, experimental compared with control, t= 1.42 favors the experimental group but it is not significant at the .01 level.

Table 3

DATA ON EXPERIMENTAL AND CONTROL GROUPS IN CAMPUS METHODS CLASSES, FALL AND WINTER TAUGHT BY THE SAME INSTRUCTORS (A THROUGH D) UNDERSTANDING THE TEACHING PROCESSES

	Pre-Test			Post Test				
Groups	N	M	S.D.	N	M	S.D.	Gain	t gain
Mathematics (instructor A)								
Fall contr.	21	38.05	5.40	21.	40.19	5.70	2.14	1.68
Winter Exp.	27	28.26	3.49	28	29.18	3.40	0.92	.72
Social Studies (Instructor B)								
Fall Contr.	34	38.32	5.30	34	44.38	5.70	6.06	4.77**
Winter Exp.	26	29.54	3.33	27	30.81	3.09	1.27	1.00
English (Instructor C)								
Fall Exp.	30	40.27	5.80	26	44.34	4.60	4.07	3.19**
Winter Contr.	38	29.54	3.33	43	30.81	3.09	1.27	1.00
Science (Instructor D)								
Fall Exp.	27	38.47	6.70	24	39.37	6.80	-.10	-.08
Winter Exp.	13	30.31	5.18	14	30.43	3.73	.12	.09
Fall Contr.	32	39.22	4.30	32	40.25	4.80	1.03	.81
Winter Contr.	19	30.27	5.34	19	32.53	4.45	2.27	1.78

** significance at .01 level

Exp.= Experimental group

Contr.= Control group

This section takes up the fall and winter experimental and control groups on the above measure. The data in Table 3 are organized by instructor and special methods class. In the mathematics group there were no significant gains in either experimental or control classes. In the social studies groups the control made a significant gain but the experimental did not. In English the experimental group made a significant gain and the control group did not. In the science groups, two for each term, the combined control groups did not make significant gains.

In summary, the viewing of documentary sound films by the experimental groups in methods classes in Spring 1961, Fall 1961 and Spring 1962 tended to aid the students in an understanding of the teaching processes but the aid was by no means universal nor was it statistically significant. Therefore, the hypothesis A,1 must be rejected. There is no basis in the experimental evidence in the present study to hypothesize that "The Viewing of Documentary Sound Films" will increase the understanding of the teaching process, as measured by the test tabeled,"Understanding the Teaching Processes in the Secondary School."

2. Analysis of the Quality of Observation as Indicated by Students in Experimental and Control Groups

At the end of their methods class experience, the students were asked to judge the quality of observation on 23 topics related to methods course content and further related to the films developed. Some of the topics, in the minds of the project team, were more completely covered by films than were others. However, in the chi square analysis at the termination of Spring 1961 Fall 1961 and Winter 1962 classes the experimental group rated more observations at a more satisfactory level than did the control group. For details see adjacent tables 4 and 5 which indicate the group which reports significantly better quality of observation. When the word "neither" is used, no significant difference is indicated.

The experimental special methods groups, Fall 1961, Winter 1962 had the highest number of significant observations. The Spring 1961 group had four significant observations favoring the experimental group, one favoring the control group. Of the total of 23 items, 15 had a more satisfied response from the experimental group, so that although individual items were not generally significant there was a total impact favoring filmed observations. This impact is even stronger in the Fall 1961 and Winter 1962 experimental groups.

Table 4.

ANALYSIS OF QUALITY OF OBSERVATION MADE BY EXPERIMENTAL GROUPS AND CONTROL GROUPS, BASED ON CHI SQUARE ANALYSIS OF RESULTS FROM FINAL TEST FORM,"EVALUATION OF A-V AND RELATED OBSERVATIONS". INDICATED IS THE GROUP PROVIDING SUPERIOR OBSERVATION

Observation Topic	Spring 1961	Fall 1961	Winter 1962
a. Provision for Individual differences	neither	neither	control
b.Demonstrated unit teaching	neither	experimental	neither
c. Teaching a mental skill	neither	experimental	exp.
d.Teaching for creativity	experimental	experimental	control
e. Use of pupils as teachers helpers	neither	experimental	exp.
f.Handling controversial issues	neither	control	exp.
g. Use of project teaching	neither	neither	exp.
h. Demonstrating a review lesson	experimental	experimental	neither
i.Teaching a concept	neither	neither	exp.
j. Pupil discussion	neither	neither	neither
k. Laboratory teaching method	neither	control	exp.
l. Handling discipline	control	control	exp.
m. Understanding drop-outs	neither	neither	neither
n. Use of A-V material	neither	neither	neither

Table 4 (con't)

Observation Topic	Spring 1961	Fall 1961	Winter 1962
o. Use of Pupil Committees in class	neither	experimental	exp.
p. The art of questioning	neither	neither	exp.
q. Development of an assignment	neither	experimental	neither
r. Inductive-deductive teaching	experimental	experimental	exp.
s. Teaching current events	neither	experimental	exp.
t. Multiple text approach	neither	neither	exp.
U. Diagnosis of pupil differences	neither	control	neither
V. Methods of beginning a lesson	neither	neither	exp.
W. Pupils' work as a basis for grammar instruction	experimental	experimental	control

SUMMARY OF RESULTS ON
DEGREE OF STUDENTS' SATISFACTION WITH OBSERVATION EXPERIMENTAL GROUP SAW FILMS DEVELOPED, CONTROL GROUP HAD OTHER OBSERVATIONS IN METHODS CLASSES DATA ARE IN FREQUENCIES FOR THE 23 ITEMS JUDGED CONTROL GROUP ADJUSTED FOR SMALLER EXPERIMENTAL GROUP
(CONTROL GROUP CONSIDERED AS STANDARD)

Judged quality of Observation

	poor	adequate	fully observed
Scale Values	1,2	3,4,5	6,7

Spring 1961 General Methods Classes

Experimental	82	287	431
Control	144	282	374

with 2 degrees of freedom chi square, 35.48 is significant at .01 level, favors experimental group

Fall 1961 Science Methods Classes

Experimental	116	272	188
Control	190	200	186

with 2 degrees of freedom chi square, 54.23 significant at .01 level, favors experimental

English and Social Studies Methods

Experimental	79	170	348
Control	100	187	310

with 2 degrees of freedom chi square 10.59 significant at .01 level, favors experimental

Winter 1962 Science Methods Classes

Experimental	85	142	77
Control	166	102	36

with 2 degrees of freedom chi square 101.55 is isgnificant at .01 level, favors experimental group

English and Social Studies

Experimental	79	248	302
Control	155	190	284

with 2 degrees of freedom chi square 56.24 significant at .01 level, favors experimental group

Results of Four Essay Measures

All groups were quite accurate in their recognition and understanding of the ten methods which were measured (measure one). This is evidenced by the fact that the lowest group mean was 8.39 methods described correctly out of a possible 10. In comparing the control and experimental groups for the three periods there were no significant differences.

For measure two, wherein the student's essay was checked for content revealing methods understanding, in two out of the three periods, the experimental group was significantly higher at the .05 level. The third period, spring 1961, had a higher score for the experimental group but it was not significant.

The fact that the experimental group was higher in every case indicates a greater facility with methods terms in the essay writing of the students in the experimental groups.

The essay writing was judged on a point scale for students' creative approach to techniques of teaching (measure 3). These papers were judged independently by the associate for research. Students' names were not listed and data was not summarized until all papers were judged.

In the results the experimental group in each teaching period had higher scores than the control group. The difference was significant at the .01 level for winter 1962, approached significance in spring 1961 and showed no significance difference in fall 1961. The fact that in each period the results favored the experimental group would lead to the conclusion that the group viewing the documentary films, in their own writing, on teaching, indicated a more creative approach to teaching.

The last essay measure, considered the content indicating a emphasis on critical points in the teaching process (measure 4). The topics selected by the students for essay responses were scored by a definite priority list developed from the philosophy of the methods course. The results were varied in that in one period the experimental group was significantly higher at the .05 level, in another period the control group was higher, approaching significance at the .05 level. The third comparison indicated no significant difference between experimental and control groups.

A review of all the data for measure 4 indicates that the students were about equal in their fairly high scores obtained on this measure. The high mean scores indicate that the students' expressed value of methods selected agreed quite closely with the philosophy in the methods course.

As a general summary of the results of four essay measures it would seem that the students did well, as a whole. In addition, in these voluntary expressions in a limited structured essay, the students have freely indicated a knowledge of teaching processes. The outstanding fact is that all significant differences favored the experimental group. The major success of the experimental group dealt with content indicating understanding of methods and content indicating a creative approach to teaching. These areas were clearly exemplified in the films.

Therefore, the hypothesis A,2 is accepted. Students do consider the observation of documentary sound films to be advantageous when compared to other techniques used in the methods courses in secondary education at The Pennsylvania State University and they lend some support to the previous hypothesis A,1 that viewing documentary films increases the understanding of the teaching processes.

2

Table 6

THE RESULTS OF FOUR ESSAY MEASURES TAKEN AT THE COMPLETION OF METHODS CLASSES SPRING 1961, FALL 1961, WINTER 1962

Measures:
1. Accuracy of Statements about Methods
2. Content revealing methods understanding
3. Content indicating creative approach to teaching
4. Content indicating an emphasis on critical points in the teaching process

Measure 1

Groups	N	M	S.D.	Difference $M_e - M_c$	t_{e-c}
Spring 1961					
Experimental	34	8.56	1.67	.17	.74
Control	77	8.39	1.18		
Fall 1961					
Experimental	49	9.16	.98	-.20	-.87
Control	64	9.36	.71		
Winter 1962					
Experimental	68	8.96	1.44	.18	.78
Control	61	8.78	1.06		
Measure 2					
Spring 1961					
Experimental	34	20.0	6.74	1.65	1.19
Control	76	18.35		6.51	
Fall 1961					
Experimental	49	11.63	3.40	1.46	2.35*
Control	64	10.17	3.13		
Winter 1962					
Experimental	66	12.30	3.62	1.47	2.52*
Control	60	10.83	2.91		

Table 6 (con't)

	N	M	S.D.	Difference $M_e - M_c$	t_{e-c}
Measure 3					
Spring 1961					
Experimental	34	6.12	2.18	.83	1.93
Control	76	5.26	2.17		
Fall 1961					
Experimental	48	4.86	1.61	.08	.27
Control	64	4.78	1.41		
Winter 1962					
Experimental	66	5.39	1.45	.83	3.22**
Control	59	4.56	1.43		
Measure 4					
Spring 1961					
Experimental	34	24.88	4.56	-.13	-.14
Control	76	25.01	4.68		
Fall 1961					
Experimental	49	26.20	4.30	-1.56	-1.95
Control	64	27.76	4.07		
Winter 1962					
Experimental	66	26.52	4.35	1.88	2.10*
Control	60	24.64	5.53		

6

* means significant at the .05 level
** " " " " .01 level

Hypothesis B

Results from the Evaluation of the Performance of Student Teachers in Student Teaching, Fall 1961, Winter 1962 and Spring 1962

The evaluation of the performance of student teachers came from four sources:

A. The one-half hour interview with each cooperating teacher at the end of the student teaching period (long form)

B. The summary of specific skills possessed by the student teacher as indicated by the cooperating teacher (short form)

C. The review of lesson plans made by the student teachers during their period of student teaching.

D. Completion of the long form interview sheets by the college supervisors of student teachers.

Half Hour Interview Long Form

The topics listed above are expanded as follows:

A. The adjacent table shows the results of the final half-hour interview which gathered data on the quality of the student teacher's performance in the basic teaching techniques. The highest mean scores were made by the experimental groups in all cases. In the fall and winter teaching periods the experimental groups had a significantly higher quality performance at the .01

level when compared to the control groups. In the spring 1962, although the experimental group had a higher mean it was not significantly higher than the mean of the control group for the same period.

This evidence from the cooperating teachers indicates superior teaching performance for those students who viewed the films developed for this study.

Table 7

SUMMARY OF THE RESULTS OF THE FINAL ONE-HALF HOUR INTERVIEW (LONG FORM) WITH COOPERATING TEACHERS AT THE END OF THE STUDENT TEACHING PERIOD

DATA ARE POINTS DETERMINED BY QUALITY OF STUDENT TEACHER PERFORMANCE IN BASIC TEACHING TECHNIQUES

Teaching Period		Experimental Groups	Control Groups	Diff. M_e-M_c	t_{e-c}
Fall 1961	N	26	56		
	M	165.19	120.00	45.19	4.51**
	S.D.	36.10	52.91		
Winter 1962	N	39	75		
	M	146.84	108.73	34.11	4.09**
	S.D.	43.10	40.56		
Spring 1962	N	55	55		
	M	122.27	118.00	4.27	.53
	S.D.	46.87	39.77		

** significant difference at .01 level

B. Specific Teaching Skills (short form)

The two tables in this section show the results of the short form final interview "Summary of Specific Skills Possessed by the Student Teacher", with the cooperating teacher.

Table 7 is prepared for the fall student teaching group, Table 8 is a summary of the fall, winter and spring student teaching groups.

Specific Teaching Skills (Fall 1961)

A supplemental interview form was used to get the ratings of master or cooperating teachers on the teaching skills they felt the student teacher demonstrated early in his performance as a student teacher. The student teachers had general methods classes in the spring 1961 one experimental class and two control classes.

In 14 of the 19 items on the short interview form, the master teachers who observed the student teachers gave better ratings, A.B.C., to the experimental group, 11 of these are significant. The total frequency of the control data was reduced to give the same total frequency as the experimental. The control group was used as a standard and chi square was calculated, (133.95) with 38 degrees of freedom. The cooperating teachers judged the control group to be superior in none of the 19 items.

Table 8

*SUMMARY OF SPECIFIC SKILLS POSSESSED BY THE STUDENT TEACHER -FALL 1961

Items on Supplemental Interview Form	A		B		C (not prepared or not observed)		X (experimental superior)
Teacher Classroom Activity	Exp.	C	Exp.	C	Exp.	C	
1. Use of pupils as helpers	9	7	9	13	8	6	0
2. Get class started	13	7^a	9	11	4	8	X
3. Pupil report	16	13	3	4	7	9	X
4. Pupils Use graphics	12	8	5	7	9	11	X
5. Pupils demonstrate	15	5^a	5	8	6	13^a	X
6. Pupil project	11	9	2	7^a	13	10	0
1.Lesson Plans	17	11^a	7	9	2	6	X
2. Resource Unit	12	8	8	10	6	8	X
3. Lead Discussion	17	8^a	5	10	4	8	X
4.Present topic	14	5^a	9	14	3	7	X
5. Class criticism	13	9	7	5	6	12	X
6. Teach controversial issue	4	3	8	8	14	15	0
7. Do housekeeping	6	7	11	9	9	10	0
8. Efficient Distribution	16	8^a	8	10	2	8^a	X
9. Art of questions	10	5^a	10	9	6	12	X
10.Give assignments on time	14	7^a	7	11	5	8	X
11.Organize Committees	9	7	5	8	12	11	0
12.Use chalkboard	19	14	6	8	1	4	X
13. Use bulletin board	11	10	7	6	8	10	X

Chi Square 38df = 133.95. Cells which were large contributors of Chi Square are marked (a)

*Content used as standard for goodness of fit chi square

With experimental Group (Exp) at N=26, data from Control groups (C) reduced to the same number

In the winter term of student teaching, the cooperating teachers judged the experimental group to be significantly better than the control group on seven of the 23 items and judged the control group superior in none.

In the spring term 1962 of student teaching, 13 of the 19 items showed no significant difference between the experimental and control groups on skills as judged by the cooperating teachers. The experimental group had one item significantly in its favor and the control group had 5 items in its favor.

The specific skill items most clearly possessed by the experimental group during the year of student teaching were:

Having pupils do demonstrations
Making lesson plans
Getting class started
Being able to have pupils do a project
Present a topic
Handle class criticism
Teach a controversial issue
Distribute and collect class materials efficiently
The art of questioning
Giving assignments on time
The use of chalkboard

The items which possibly favored the control group were:

Organizing groups into committees
The use of the bulletin boards

Table 9

SUMMARY OF SKILLS POSSESSED AT START OF STUDENT TEACHING PERIOD ASJUDGED BY COOPERATING TEACHERS

FALL, WINTER, SPRING

RESULTS OF CHI SQUARE ANALYSIS

	Teaching Periods		
Items in Teaching Skill	Fall 1961	Winter 1962	Spring 1962
1. Use of pupils as helpers	N.S.	N.S.	N.S.
2. Get class started	E	N,S.	N.S.
3. Pupils report	N.S.	E	C
4. Pupils Use graphics	N.S.	E	C
5. Pupils demonstrate	E	E	N.S.
6. Pupil project	E	N.S.	N.S.
1. Lesson plans	E	N.S.	N.S.
2. Resource unit	N.S.	N.S.	N.S.
3. Lead discussion	E	E	C
4. Present topic	E	E	N.S.
5. Class criticism	E	E	N.S.
6. Teach controversial issue	N.S.	N.S.	N.S.
7. Do housekeeping	N.S.	N.S.	E
8. Efficient distribution	E	N.S.	N.S.
9. Art of questions	E	N.S.	N.S.
10. Give assignments on time	E	N.S.	N.S.
11. Organize committees	N.S.	N.S.	C
12. Use chalkboard	E	E	N.S.
13. Use bulletin board	N.S.	N.S.	C

N.S. No significant difference

E Difference favors experimental group

C difference favors control group

Table 10

SUMMARY OF RESULTS OF COOPERATING TEACHERS JUDGEMENTS ON 19 SKILLS POSSESSED BY STUDENT TEACHERS

DATA ON SUM OF TALLYS ON 19 SKILLS, CONTROL GROUP REDUCED PROPORTIONATELY TO EQUAL TOTAL OF EXPERIMENTAL GROUP

Quality Rating

	A	B	C
Fall 1961			
Experimental	238	132	125
Control	152	167	176

with 2 degrees of freedom, chi square of 70.66 significant at .01 level,favors experimental group

Winter 1962			
Experimental	261	271	249
Control	215	306	260

with 2 degrees of freedom chisquare of 14.255 significant at .01 level favors experimental group

Spring 1962			
Experimental	292	318	393
Control	348	302	353

with 2 degrees of freedom chi square 10.045 significant at .01 level favors control group

Total for three student teaching periods			
Experimental	791	721	767
Control	715	775	789

with 2 degrees of freedom, chi square 12.454 significant at .01 level favors experimental group

---

C include not done or not observed

C. Review of the Lesson Plans

The review of lesson plans led to the conclusion that there was varying degrees of evidence which might be due to filmed instruction. This study contained an analysis based on the count of techniques and methods previously taught in methods classes which appeared in the detailed lesson plans of student teachers as they taught. All the lesson plans were reviewed by one person, the project director, then after tally was made, each student was placed in his experimental or control group as originally taught on campus.

The following tables are grouped by methods classes. For example, both mathematics methods classes were taught by the same college instructor. One group in the fall (experimental), the other in the winter (control). The other special methods groups were similarly taught except that the experimental and control sequence was reversed in part of the classes as indicated below.

The higher score for a set of lesson plans means that the teacher, by the use of the terms, may indicate a stronger grasp of the techniques previously taught in methods class.

Schedule of Classes

	Control	Experimental
Spring 1961 (General methods)	40 students(teacher B) 40 students(teacher C)	40 students(Teacher A)
Fall 1961 (special methods)	Social Studies Methods Mathematics Methods Science Methods (class #1)	English Methods Science Methods (class #2)

Schedule of Classes (con't)

	Control	Experimental
Winter 1962 (special methods)	English methods Science methods (class #2)	Social Studies methods Mathematics methods Science methods (class #1)

Table 11

LESSON PLAN RESULTS WHEN STUDENT TEACHING GROUPS WERE TAUGHT ON 10 WEEK TERM BASIS

	EXPERIMENTAL	CONTROL	t_{M-M}
	Mathematics Methods Classes (number of items mentioned)		
	Winter	Fall	
N	18	20	5.48**
M	19.83	5.25	
S.D.	9.90	5.69	
	Science Methods Classes		
	Fall and Winter	Fall and Winter	
N	29	31	2.59**
M	12.71	7.06	
S.D.	10.15	6.23	
	Social Studies Methods Classes		
	Winter	Fall	
N	17	32	4.67**
M	19.29	7.84	
S.D.	8.95	6.54	
	English Methods Classes		
	Fall	Winter	
N	21	26	5.16**
M	24.2	9.11	
S.D.	13.15	3.06	

** significant at the .01 level

Table 12

LESSON PLAN RESULTS FROM VARIOUS GROUPS STUDENT TEACHING, FALL WINTER AND SPRING TERMS

Student Teaching in Fall 1961 and Winter 1962 terms

		Experimental	control	t_{M-M}
Same Semester	N	65	136	
General Methods	M	30.3	12.08	5.58**
plus Term special	S.D.	25.07	11.29	
methods classes				

Students Teaching in the Spring Term 1962

Same	N	48	55	
as	M	17.75	7.25	7.16**
above	S.D.	9.53	3.73	

	All students in Experimental or in Control Groups	Students not in the Study	
N	304	67	
M	16.01	12.23	1.49
S.D.	16.59	13.46	

** significant at .01 level

This last data can be interpreted that the students who were studied, although a higher mean, did not differ significantly from the group of students who were not in the study group.

The review of the lesson plan data indicates that the experimental groups (those who saw the documentary teaching films) had a significantly higher indication of learning or performance as indicated by course content in plans which they used for teaching. This was true in the combined experimental compared to the combined control groups at different teaching times (T's = 5.58 and 7.16). Further, when compared by identical teachers or methods classes which reversed control and experimental conditions, this same superiority was significantly in favor of the experimental method t's (2.59 to 5.48).

Table 13

SUMMARY FROM USE OF INTERVIEW FORM BY UNIVERSITY SUPERVISORS, JUDGING TEACHERS FALL 1961, WINTER 1962 and SPRING 1962

		Means			
		Experimental	Control	E-C	Significance
Fall 1961	N	19	32		
	M	138.55	144.60	-6.05	NS
Winter 1962	N	43	74		
	M	122.75	102.85	19.90	t=2.06*
Spring 1962	N	42	50		
	M	102.76	98.2	4.56	NS

---

* significant at .05 level

D. Completion of the long interview sheets by the college supervisors of student teachers.

In those cases where the college supervisors felt that they were sufficiently acquainted with the details of the interview form and with the students teachers' performance, they filled out the long interview sheet on the performance of student teachers.

The number of students rated by supervisors in the fall term was approximately half the number rated by teachers in their interview. There was no significant difference between experimental and control groups in the fall as judged by the supervisors.

In the winter term of student teaching the supervisors judged approximately all the student teachers. They indicated that the experimental group was superior to the control group, T=2.06, this is significant at the .05 level. This judgement of the winter group agrees with the judgement by the master teachers which gave a significant difference favoring the experimental group at the .01 level.

In the spring term 1962, the supervisors judged a majority of the student teachers. The difference between control and experimental groups (4.56) favoring the experimental group was very close to the difference of 4.27 as judged by the cooperating teachers, although these judgements are in the direction of the experimental group, they are not statistically significant.

Since the college supervisors observed the student teachers less frequently than did the cooperating teachers, their scoring tended to be more restrictive and the means were generally lower, but in the same pattern, as the judgements of the cooperating teachers. See data in Table 13.

Summary of Results From Hypothesis B

The general impact of the analysis of results of the measures used in teaching performance indicated that those student teachers prepared in campus methods classes by the use of documentary films made for this research study, were superior to student teachers prepared under the usual or control methods.

The review of the students' work by the half-hour interview with the cooperating teacher indicated that the experimental students were superior in the methods taught in the on campus courses.

The cooperating teachers were also asked to judge the skills possessed by the student teacher (short form). On these specific skills, considering all three teaching periods, the experimental group showed a higher level of performance. This was indicated by having more specific skills favoring the experimental group and the chi square analysis of the total teachers' judgement about student teachers, fall, winter and spring.

The results from the analysis of lesson plans of the student teachers favored the experimental group in each teaching period and also within each subject method area. This measure, which was not anticipated by any student teachers involved, by any cooperating teachers or by the supervisors involved, provides an independent analysis of the day-to-day performance of the student teacher. This lesson plan review clearly indicated that the experimental group had a more complete comprehension of the objectives of the on-campus methods courses than the control groups. This shows a permanence of the affect of the methods films, because the methods courses in other respects were equal.

Ths University supervisors, in their judgement of the student teachers in the study parallel the opinion of the cooperating teachers, indicating a general superiority for the experimental group.

In light of the foregoing analysis concerning hypothesis B, the hypothesis is accepted that viewing films developed for this research did improve the teaching performance of those student teachers as compared to the students who did not have the opportunity to observe the documentary methods films.

TECHNICAL RESULTS FROM MAKING THE FILMS

Several experiments were tried by the technical crew to solve the problems of picture and sound. Some proved successful and some were discarded. For the first filming attempts at State College High School a dish-pan microphone was constructed and placed in the front left-hand corner of the room. The theory behind this experiment was based on the known use of such an apparatus for the recording of bird songs. The experiment was not completely successful because of the loss of voice intelligibility, although it had good valume characteristics. It is believed that this technique deserves further investigation.

Conventional microphones were discarded because the wiring and monitoring of large numbers of microphones is expensive and time consuming and difficult if not impossible to monitor successfully by one sound man in a temporary set-up.

After trial, the crew found that they were unable to use successfully a single system sound track because the voice intelligibility was too poor. Success was achieved by recording the voice on magnetic film and using the Double-System Technique in recording and printing.

To further maintain sound quality the usual optical track was dispensed with and sound was printed directly from the original magnetic track to the release print.

The lavalier type microphone was discarded in favor of the radio microphone except where sound interference by short-wave radio or faulty neon lights forced its use.

After some experience in editing the early films, work prints were found unnecessary. This was true because the films were documentaries and the project director was unwilling to edit the films except where length or the use of parallel or supplementary cameras made it necessary. This cut costs radically and added authenticity to the films as documentaries.

To increase the speed of monitoring the sound, the cameraman attempted to select the microphones in use. The idea seemed good but in practice it proved to be more than the cameraman could manipulate.

In the beginning, a filming program was limited to 44 minutes because that was the capacity of the reel for the magnetic film. This time limitation was overcome by using two recorders in tandem. This same type of limitation in the use of cameras (32 minutes) was overcome in a like manner.

Dividends Accruing From the Use of the Films.

In addition to the basic mission of the films, the evaluation of their use in undergraduate methods classes, some of the concomitants, the dividends, resulting from the research project under discussion seem worthy of mention at this time.

A. Throughout the entire progress of the research, from the time that the first instruction sheet (Guide Lines To Good Teaching) went out to teachers who were participating in the filming of the techniques, until the last cooperating teacher was thanked for his help in the program, administrators and teachers involved have expressed gratitude to the research staff for the help they say they received. Some of the types of help teachers and administrators believe they received are expressed by: "review of basic techniques", "emphasis on fundamentals in methods", " I am learning techniques I never knew existed", "Wonderful to discover that some college still believes in a variety of basic techniques for their young teachers", "This has put new life into our teachers", "This has been a real in-service training experience for the teachers involved", "you are getting a movie from me, I'm learning more about teaching from you". This had the general aspect of action research in that the people involved, through their very participation realized the soundness of scientific techniques in teaching methods.

B. Already, the films have been used extensively in graduate classes in teacher education at Penn State. Professors claim that the films satisfy a real need to prove to graduate students that various techniques can and are being used in public secondary schools. The most intensive use of the films has been in graduate class in "The Supervision of Student Teachers".

C. The use of the films in a program of in-service education of teachers seems destined to be of major importance. After teachers have some teaching experience they may be then maximally ready to observe and discuss methods of teaching which will aid them in providing a more varied and efficient program for their pupils.

Several business firms have repeatedly used several of the films in their training sessions.

D. School administrators have already shown the films to School Boards of Education and other civic groups interested in some special program such as guidance and the teaching of reading in secondary schools. At other times the films have been used as a more general public relations vehicle to show classroom teaching excellence.

E. College instructors in undergraduate methods classes at Penn State continue to use the films although their classes are no longer "experimental".

OBSERVED"DIVIDENDS"IN TECHNIQUES

As the films were reviewed it became evident that, in addition to showing the technique which was the central theme, many films clearly brought out other worthwhile techniques of teaching. Some of the more evident "Dividends" are suggested in the following paragraphs.

Film #1. The Inductive-Deductive Technique Biology

Its central objective was to demonstrate the inductive-deductive method of teaching in a science class. In the process of using the technique the teacher "led the pupils to discover" a scientific truth. This has been called,too, the "casestudy method" and the "laboratory method".

Film #2. Problem Solving World Problems

Here was a good example of teaching a controversial issue through the use of the problem solving method. There were shown good examples of teacher led class discussion leading to an analysis of propaganda. Dewey's five steps ina complete thought were used as the basis for problem solving.

Film #3. Subject-Centered Unit American History

In addition to using Patrick's eight steps in teaching a unit, the teacher showed good use of teaching materials, good use of the library and the use of resource persons. He did well in supervised study and in the use of projects for class groups.

Film #4. Inductive-Deductive Method Mathematics

Here the teacher demonstrated the flow of the inductive into the deductive in a series of related exercises of ascending difficulty. Sustained class participation was of excellent quality.

Film #5. Teaching a Concept Social Studies

It should be noted that several times the teacher detours from teaching the central concept in order to teach subsidiary concepts which are necessary to the understanding of the central concept. This class with the help of the teacher, developed a basic outline for each unit taught and then used a variety of sources rather than a basic textbook. The film demonstrated excellent teacher leadership in directing the class discussion. Here the teacher was able to inspire the pupils to come to some conclusions and to understand the need for more study in order to arrive at other conclusions.

Film #6. Teaching a Concept mathematics

The "dividends" in this film were the patience and skill in questioning demonstrated by the teacher.

Film #7. Teaching a Motor Skill Shorthand

The steps in teaching a motor-sensory skill are shown repeatedly throughout the lesson. The teacher used a wide variety of techniques. An unusual method of beginning the lesson was shown. The semester goals for the class were written on the chalkboard. At the end of the lesson the teacher explained the relationship of the co-curricular club, Future Business Leaders of America, to the work of the class.

Film #8. Teaching a Concept Physics

The teacher began this class in an unusual way. He used pupils extensively throughout the period. The inductive-deductive technique was in evidence Some good examples of the art of questioning were evident.

Film #9. Teaching a Mental Skill Mathematics

Excellent pupil participation enabled the teacher to clearly demonstrate the steps in this technique.

Film #10. Diagnosis of Learning Difficulties and Remedial Teaching English

The theme of the film was that learning difficulties in English should be diagnosed and remedied within the context of the students' work. The use of pupils' reading records, pupil responsibility, and the informal working relationship between teacher and pupils were the chief dividends in this film.

Film #11. Teaching Fundamentals in a Meaningful Context French

In this class the teacher used well known parts of French Literature to teach translation, pronunciation, vocabulary, grammar. The dividends were, work in a language laboratory, use of a student teacher as helper, the pupils had fun as they learned through presentation of several skits taken from French Literature.

Film #12. Creative Imagination Advanced English

The class was filmed showing a period of organizing and summarizing ideas gathered from a broad and deep reading of source materials. The teacher showed unusual skill in getting the class started and in leading the discussion without dominating it. His knowledge of, and his relationship to his pupils was remarkable.

Film #13. Review Lesson Biology

The film showed an unusual amount of pupil participation. The thoroughness of the preparation and the extent to which pupils involved one another in the review were worthy of note. The role of the student teacher, the reliance on sources rather than the teacher's word and the method of beginning the class were additional points to consider. A wide use of instructional materials was shown.

Film #14. Current Events Through Instructional Materials Geography

The current events used were related to the geography being studied. The film illustrated how, with proper planning and excellent pupil involvement, instructional materials can deepen and broaden the understanding of the lesson.

Film #15. Diagnosis of Learning Difficulties and Remedial Teaching Mathematics

In this film the teacher practiced the oft-repeated but seldom practiced advice,"find out where the pupils are and begin from that point to teach them". In the process excellent examples of the inductive and deductive technique of teaching, the use of a student teacher to help with the class, and pupil participation were seen.

Film #16. The 1960 Presidential Election English

This film was a "target of opportunity". The teacher involved was prepared to teach a concept (Film #17) on the following day. The equipment was set up in his room when pupils arrived the morning after the 1960 presidential elections. Neither pupils nor teacher had any warning that the class would be filmed. The results are a record of "first feelings" even before the results were fully determined.

Film #17. Teaching A Concept English

In addition to the concept objective, the film shows the wide use of sources of both an historical and literary nature.

Film #18. Some Contributions of the Classroom
Teacher to Guidance

Many short examples of teaching techniques can be identified as the film progresses. Excellent teacher-pupil relations were shown. The film gave a rather comprehensive picture of a high school faculty at work. It included some functioning of the high school principal.

Film #19. Pupil Centered Unit Junior High School
Social Studies

The teacher lead the class to discover, prepare, present, and evaluate a unit of work of their own choice.

Here were included excellent examples of pupil-teacher planning, organization of pupils into groups, group planning and research, and the role of the teacher in advising, scheduling and helping junior high school pupils become more efficient in helping themselves.

Film #20. Creativity - The Project Approach English

The teacher displayed unusual knowledge of the pupils, and of the subject matter under consideration. Many examples of pupil-pupil communications were shown. A recognition of the many possibilities for creativeness among pupils comes out in the lesson.

Film #21. Creative Writing English

The dividend in this film was the willingness of the pupils to express themselves in class and their acceptance of criticism from one another. This class was another example of deep pupil involvement in the work at hand.

Film #22. Teaching of Reading in the Secondary School

In each of the subj-parts of the film at least one teaching technique was shown. Excellent use of instructional equipment and materials were evident. There is, often, excellent pupil involvement. Here, as in the film on guidance, a composite of the work of a secondary school is evident.

Film #23. Teaching a Concept (Film 2) Mathematics

Excellent teacher-pupil relations are shown.

Film #24. How to Interview a Pupil

The film showed one type of interview based on one point of view.

PROPOSALS FOR FURTHER STUDY

1. Use the basic design of the present research project. But search out and document pioneer, "growing edge" techniques of teaching instead of filming basic, "bread and butter" techniques for beginners. This has never been done with actual classroom procedures and normal pupils in real public schools

2. Design a research study to determine the usefulness of the documentary films produced in this project for a program of in-service re-education of teachers in basic techniques of teaching.

Teams of college instructors could be organized to use appropriate films for the focal point of study on techniques chosen by the secondary teachers involved in the study. If several teams, each in a different district of the Commonwealth were to concentrate on such a program of study in their area, considerable progress in more efficient and effective teaching might result.

3. Other basic techniques of teaching for beginners could be filmed. These additional films would fill out the gaps in techniques left by the present study, they could replace films deemed of poor quality, and they could update films as they fall behind in either subject matter or in techniques

4. A massive, all out, attack on methods of teaching basic techniques should be immediately launched. The present research was concentrated on one phase of the problem, the methods class preparation of student teachers. This is not enough. Evidence gained while carrying out the present research project indicated to the project director and the associate for research how poorly even the best students in the experimental sections used, in student teaching, the techniques presented in educational psychology and educational methods classes.

It is now proposed to make a concentrated, massed attack on the teaching of basic techniques needed for students to begin to teach adequately.

The proposed sequence follows:

(a) Begin with educational psychology class. Agree upon approximately six basic techniques of teaching such as concept, problem solving, inductive-deductive, transfer, pupil involvement in learning, mental and motor skills, learning in context. Have the students learn the psychological content and the basic research background of the techniques.

(b) In special methods classes be sure that the teachers are well oriented to the techniques agreed upon. Have the students practice the techniques as they relate to each subject area. Students will use each decided upon technique in making unit plans and daily lesson plans. They will practice each of the techniques so that they can use them successfully. They will see documentary films showing how good teachers have used the techniques in actual classrooms in actual public schools.

(c) Teach the Penn State field supervisors of student teachers the techniques, and have them practice the evaluation of the techniques. This can be done in the summer term graduate class in "supervision of Student Teachers", which all supervisors of student teachers take in preparation for their field work during the succeeding terms of the year. Prepare supervisors to evaluate student teachers on the use of the techniques. Again the documentary films already produced are a real help.

(d) Hold graduate classes in methods of teaching for each basic subject matter area in each Penn State student teaching center, throughout Pennsylvania (3 basic areas, west, east, central). Invite all cooperating (master) teachers to take the class as "review" of basic techniques of teaching. Give cooperating teachers graduate credit, without cost, for the course.

(e) Follow-up all first or second year teachers and evaluate results.

5. Repeat the design of the present research project but involve representatives of each subject area major in the preparation of the techers for the secondary schools.

The proposed procedure follows:

(a) Use the inter-departmental committees now in existence as advisory committees. They are now working in each major subject area.

(b) Have the appropriate inter-departmental committee choose one or two college instructors from each subject area (such as mathematics or English) to observe and study actual classroom procedures, pupils, teachers, subject matter, in the best public secondary schools of Pennsylvania. Send them into the field accompanied by the secondary education methods professor in the same area.

(c) From the results of the combined study as proposed in (b), design new courses or modify existing ones or both, in each subject matter area where students are prepared to teach in the secondary schools. Teachers need some specialized courses in science, mathematics, social studies, English, modern languages, just as much as pre-medical or engineering or nursing or home economics or economics or geography. And such needs do not require inferior courses, just different ones.

(d) Design functional courses in educational psychology and in special area methods to complement the new approach to preparation in subject matter areas.

(e) Evaluate students in student teaching and in their first year or two of teaching.

Such an approach to preparing teachers for public school service would lift the morale of present education majors and indicate to possible recruits that teacher education is a program with breadth and depth and purpose.

6. Documentary films presenting essential no-teaching activities of teachers should be made. For example, teacher lesson planning, teacher test making, teacher over-all evaluation of pupil progress, department planning sessions, team teaching planning sessions, curriculum building, remedial work with individual pupils. Often the quality of these activities greatly influences the success or failure of the young teacher.

7. Continued research on new methods of successful teaching and learning is vitally important.

7. A follow up of the present population of student-teachers in their first year of teaching has been approved. It will be carried out September 1962 to September 1963 and its results will be published in September 1963.

CREDITS

The Research Staff:

Dr. Robert B. Patrick, Project Director, spent part-time for one year and full time for two years on the project.

Dr. Hugh Davison, Associate for Research, spent part-time during the three year life of the project.

Dr. Deno Thevaos, Associate for Psychology, spent part-time during the first year of the project.

Mrs. Mabel N. Patrick acted as secretary and research assistant, part-time, for the duration of the project.

College professors in Secondary Education who taught the experimental and control classes in educational methods were a vital part of the research project. They were:

Dr. Nell Murphy, English Methods
Dr. Donald McGarey, Social Studies Methods, General Methods
Dr. Burton Voss, Science Methods
Dr. Andrew Kozak, Mathematics Methods
Dr. William Page, General Methods
Dr. Robert Patrick, General Methods

The Camera Crew of the Division of Academic Research and Services of the Pennsylvania State University

Mr. Delmar Duvall, Crew Chief and Chief Cameraman
Mr. Gerald Hutchison, Sound Man
Mr. John Mertz, Assistant Cameraman
Mr. Calvin Conklin, Assistant Cameraman

Their skill, patience, perseverance, and willingness to improvise, made it possible to produce documentary sound films of actual classroom procedures in actual public schools.

CREDITS (continued)

All public school systems actively associated with the Penn State Secondary Education student teaching program cooperated with the project. The pupils, teachers, and administrators afforded the means of evaluating the performance of the student teachers in action. For their help the staff is grateful.

Without the active participation of Dr. J.W.C. Remaley, Director of Secondary Education Student Teaching at Penn State and his supervisory field staff, headed by Dr. John Yon and Dr. Ralph Lantz, this project could not have been completed.

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6. Miss Esther Cressman, Lewistown Senior High School
7. Mrs. Alice McFeatters, State College Senior High School
8. Mr. Charles Rutschky, Jr, William Penn High School York, Pa.
9. Mrs. Elisabeth Lassen, Mechanicsburg Senior High School
10. Mr. Rees Frescoln, Jr., Neshaminy High School, Langhorne
11. Mr. Stuart Glatfelter, William Penn High School, York, Pa
12. Dr. Allan Glatthorn, Abington Senior High School
13. Mr. Lyle Schwalm, Neshaminy High School, Langhorne, Pa.
14. Mr. Lawrence Bergman, Lewistown Junior High School
15. Mr. Paul Frey, Edgar Fahs Smith Jr. High School, York, Pa
16. and 17. Mr. Jacob Kuhns, Mechanicsburg Sr. High School
18. Mrs. Sarah Ricker, Bald Eagle-Nittany High School, Mill Hall, Pa.
19. Mrs. Helen Wise, State College Junior High School
20. and 21. Miss Rosana Eckman, Kane Area High School
22. Mrs. Gladys Siard, Dr. Edward Shuma, Hempfield Township High School, R.D. Greensburg, Pa.
23. Miss Myrtle Bainbridge, Hempfield Township High School R.D. Greensburg, Pa.
24. Miss Mary Alice Wilson, Graduate Student in Counseling in Education, Pennsylvania State University

APPENDIX

UNDERSTANDING THE TEACHING PROCESSES IN THE SECONDARY SCHOOL

Authors: Patrick, Thevaos, Davison, Revised #1, September 1960
The Pennsylvania State University

Directions: This is a multiple-choice test. You are requested to read carefully each item and the possible alternative answers or results. Use the separate answer sheet provided. On the answer sheet blacken completely the letter you feel represents the best answer.

Example: Teachers work under the general direction of a building
a. principal, b. janitor c. dean d. guidance person
e. maintenance man.

● b c d e blacken completely the "a" the letter representing the best answer.

1. To induce students to be creative a teacher must be willing to:

   a. try to emulate the great masters
   b. present stereotypes
   c. attempt inculcation of ideas
   d. formulate rules of procedure for creative activity
   e. sublimate personal experience as a model

2. To encourage creativity the teacher must have:

   a. a detailed lesson plan
   b. the ability to judge reference materials
   c. a concept of the problem
   d. illustrations of creative works
   e. an artistic talent

3. Creativity in a student can be fostered by:

   a. a teacher selecting bright students to serve as experts
   b. a teacher rewarding popular students for their good work
   c. a classroom climate of constructive exchange of ideas
   d. a classroom climate of orderliness and calm with resource materials
   e. a classroom climate of dramatic, art and music performances

4. The creative student is one who selects his materials on the basis of:

   a. the value they have as previously understood
   b. the function served as recognized by leaders
   c. potential service in context
   d. boldness and exciting application
   e. identification in the minds of others

5. The teacher's role in creative learning is that of a:

   a. transmitter of ideas
   b. constructive critic
   c. a person with tremendous resourcefulness
   d. a selective filter of good and bad ideas
   e. absorber of tall stories

6. Learning is to creativity as vocabulary is to:

   a. a book's index
   b. the principle of motivation
   c. the concept of readiness
   d. the dictionary
   e, thinking

7. Below are listed groups of words, select the group that best fits the attitude of a teacher encouraging creativity among her students@

   a. precise, penitent, praise, pondering, philosophical
   b. Joyful, concommitant, freedom, unsightful, pursuit
   c. controlled, literature, fostered, sensitive, aesthetic
   d. inhibited, imitative, repressible, irritant, inocous
   e. narrow, defined, sublimated, evolving, repressed

8. Select from the following, the topic which can best be used to integrate science, mathematics, English and social studies:

   a. footabll at Purdue
   b. the building of Norris Dam
   c. the art of Salvidore Dali
   d. the design of a new helicopter
   e. the nurder of Thomas a Becket

9. In planning a class project to demonstate the skills of map reading in geography, select the best plan for learning:

   a. copy topographical map of county studied
   b. find pictorial map of county to be copied
   c. take field trip in car with notes following major roads
   d. use level transit and plane table from high spot
   e. hike up principal creeks

10. Select from the following a topic for a class dramatization:

   a. convention for writing of United Nations constitution
   b. formal surrender aboard the U.S.S. Missouri
   c. Panmunjon prisoner repatriation
   d. Lincoln-Douglas debate
   e. Yalta conference

11. When a teacher plans to have the class dramatize an important event in history he should:

   a. view a well done movie to copy its style
   b. buy the script worked out by an educational service
   c. have youngsters collect clothing and articles and weave a play
   d. encourage them to research the roles and write their own script
   e. study the works of Shakespeare or other playrights for ideas on script

12. A beginning teacher should use drama best in which of the following ways:

   a. be dramatic in setting the stage for a new unit or topic
   b. encourage students to understand through identification with roles
   c. Create a swell of emphasis to fix a major understanding
   d. have students read lines from published play
   e. use it to solve the emotional problems of students

13. Given living plants in a series of tight glass containers which of the following might be a feasible class demonstration

   a. plants give off CO_2 at night
   b. plants give off O_2 in daytime
   c. plants absorb gamma rays from sun
   d. plants have cyclical fluid systems
   e. plants manufacture electrical currents

14. As a teacher you have to make a demonstration of the necessity of water to living things. Select the best demonstration:

    a. weigh a night crawler then weigh again after keeping in a dry glass jar
    b. put five salamanders in five different water environ ments
    c. with five soils in glass test tubes with petunia seeds in each, vay water content
    d. place five plant roots in varied mixtures of water and water glass
    e. with pins, block stems to some leaves and not to others

15. Select the best classroom demonstration to show that air is needed by living organisms:

    a. place worm in jar full of water
    b. place growing leaves in wax, oil, leave some leaves uncovered
    c. place gold fish in sealed jar filled with water
    d. place cat in air tight glass cage
    e. place mouse in bell jar

16. Of those listed below, the most significant function of subject matter is:

    a. teaching specific responses to problems
    b. clarifying situations to be encountered in future living
    c. developing readiness for later subject matter
    d. teaching technical vocabulary
    e. the aesthetics of our culture

17. Motion pictures are especially useful in teaching about:

    a. events involving motion or change
    b. experiences familiar to the student, but in which he has been emotionally involved
    c. events the student has not experienced
    d. Microscopic details
    e. emotions

18. For learning English equivalents of French words, which of these forms of practice is best:

    a. student listens intently to phonograph record repeating wrod pairs while he watches printed list
    b. student watches a French list while other students recite English equivalents
    c. Each student recalls and writes the English equivalents beside a list of French words
    d. pronounce them in English then pronounce them in French
    e. pronounce them in French have others pronounce in English

19. Practice is a necessary but not a sufficient condition of learning. This statement implies:

    a. evaluation must accompany practice if learning is to be effective
    b. most lessons require wise spacing of drill sessions
    c. learning and practice have little in common
    d. most practice time is wasted if lessons are difficult
    e. practice inhibits learning

20. One of these is not an important characteristic of the core curriculum:

    a. emphasis on life problems
    b. classroom guidance
    c. subject matter homogeniety
    d. de-emphasis on subject matter distinctions
    e. group problem solving

21. The basic question in determining objectives is:

    a. what behaviors will be needed in later courses
    b. what does the community demand that a young person know
    c. what behaviors are needed to perform successfully in a society
    d. what can each of the school subjects contribute to development

22. In the supervised study period, the teacher should not:

    a. walk around room to observe study habits of pupils
    b. check with students as to individual problems
    c. interrupt class to point out some common problem
    d. aid in pupils' work
    e. have individual guidance conferences

23. The reading ability of 10th graders may vary inlevels from:

    a. college to grade 4
    b. college to grade 8
    c. grade 9 to grade 11
    d. grade 8 to grade 12
    e. grade 8 to grade 11

24. When a teacher presents an attitude which is strongly contradictory to that held by a pupil, most probably the pupil will

    a. accept the new attitude if he likes the teacher
    b. cling to his own attitude
    c. try to be new attitude provisionally
    d. invent another extreme attitude
    e. have no attitude

25. "Developmental tasks" are those learnings which:

a. depend primarily on physical development
b. are nearly complete by the time the child reaches puberty
c. the culture expects all members to master at a particular age
d. the child must complete these tasks before he is ready for school
e. come from acquired skills

26. The teacher who obtains a sociogram by asking students with whom they wish to work should form groups:

a. to put together students who chose each others
b. to break up mutual-choice pairs and other cliques
c. on the basis of educational needs without regard to the sociometric results
d. to put together students of equal popularity
e. of fringes

27. Which of these techniques is most helpful in planning the curriculum:

a. a sociogram
b. projective tests
c. anecdotal records
d. problem check lists
e. vocational interest blanks

28. A diagnostic test:

a. measures underlying aptitudes and personality
b. gave an unusually accurate score
c. reports part scores on different areas of test
d. is intended for measurement of gains
e. reveals general traits

29. The chief fault of ability grouping is that:

a. it makes no privision for social-emotional differences
b. it works an emotional hardship on the less able group
c. it cannot markedly reduce the range of individual differences
d. it allows more able to proceed at a faster pace

30. Who said,"Education becomes the chief basis of conduct"?

a. Froebel
b. Spencer
c. Pestalozzi
d. Tousseau
e. Herbart

31. He said, "Subject matter should be based on its contribution toward complete living"?

a. Spencer
b. Froebel
c. Herbart
d. Pestalozzi
e. Dewey

32. "Reorganization or reconstruction of experience which adds meaning" refers to a thought by:

a. Froebel
b. Rousseau
c. Maritan
d. Dewey
e. Thorndike

33. Preparation, presentation, association and comparison, generalization or abstraction, application, are 5 steps by:

a. Froebel
b. Morrison
c. Dewey
d. Herbart
e. Bode

34. These four steps in purposeful activity: purposing, planning, execution, judging were emphasized by:

a. Froebel
b. Morrison
c. Kilpatrick
d. Thorndike
e. Spencer

35. The Morrison Plan does not have one of these elements:

a. activity units
b. mastery of content
c. a workbook
d. Herbart's
e. learning cycle

36. The Problem Method of teaching refers to:

a. inductive or deductive procedure in learning from problems
b. reflective thinking
c. project preparation for learning
d. generalization from data
e. wide application of situational learning

37. The Project Method refers to:

a. the essantial feature is the purpose of the teacher
b. teacher initiated problems
c. Pupils' whole-hearted purpose in his activities
d. "The Play Method"
e. individual pupil activity only

38. The Dalton System has:

a. idantical units for all pupils
b. projects
c. pupil prepared contracts
d. strong measurement
e. no minor provisions

39. The length and amount of homework can be a function of:

a socio-economic background of the student
b, need for discipline
c. school marking period
d. work given by other teachers
e. athletic program

40. Most students leave high school because:

a. they can get a job
b. their interests are not stimulated
c. they have failed one or more subjects
d. teachers unfair
e. their parents desire it

41. In "modern methods" the teacher has a new concept of:

a. curriculum
b. patriotism
c. duty
d. lectures
e. justice

42. A characteristic of "modern methods" is:

a. self discipline
b. memorizing
c. authoritarian leadership
d. logical subject matter
e. aims set by teacher

43. A characteristic of "traditional methods":

a. pupil-teacher planning
b. pupil experiment with new problems
c. curriculum based on adult interests
d. pupils self disciplined
e. mastery of principles

44. The teacher is to the classroom as a __________ is to a business:

a. president
b. personnel man
c. salesman
d. foreman
e. engineer

45. If a teacher has a choice he should do one of the following:

a. warn principal about tardy pupils
b. lead able John to write up new experiment
c. permit Isa to sleep, he needs it
d. hold parent conference with Sara's low I.Q.
e. try to become popular with seniors

46. A resource unit is:

a. a set of materials broader in scope than a teaching unit
b. reference shelf in library on the unit to be studied
c. a teaching unit
d. a unit in geography
e. sources the student uses as a basis for his study of the unit

47. Which of these activities might be near start of unit:

a. collect bulletin board materials
b. write reports
c. do experiment
d. make display table
e. take achievement test

48. The best test items if time is available for scoring are:

a. open-ended
b. true-false
c. matching
d. multiple choice
e. recognition

49. Which of the following is not one of the ten imperative needs:

a. health and physical fitness and mental health
b. good use of leisure time
c. develop salable skills
d. perpetuate the cultural heritage
e. think rationally

50. Which one of these instructional procedures is most crucial

a. awareness of personal appearance of student in class
b. smooth transition from one activity or drill to next
c. pupil participation in learning activities
d. maintain a bulletin board
e. use tape recordings

51. Which one of the following is lease important to classroom management and control:

a. have a record of classroom seating
b. attention to physical conditions of classroom
c. prepare materials and equipment before class starts
d. have students participate in management and control
e. develop a daily orderly routine

52. Which of the following is least useful as an instructional procedure

a. skill in questioning
b. daily lesson planning
c. provision for individual differences
d. choral reading of new vocabulary
e. variety in teaching procedures

53. The most important area for all teachers to practice is

a. writing
b. speech
c. mathematics
d. French
e. English

54. Which of the following might not be considered an error in teacher performance:

a. use of sarcasm
b. lack of knowledge of pupils' names
c. poor dress
d. standing in front of window
e. pacing the floor

55. Which of the following might not be considered an important error in teaching performance:

   a. standing in front of blackboard while talking about material on it.
   b. making assignments at last minute of class period
   c. failure to check papers correctly
   d. telling jokes
   e. infrequent reviews

56. The state education department has jurisdiction over:

   a. principal's certification
   b. all curricula
   c. local schedules
   d. board elections
   e.district debt

57. The board of education has local jurisdiction over:

   a. certification of teachers
   b. state pay scale
   c. teacher tenure
   d. school policies
   e. teacher's residence

58. Cooperative group orocesses in learning make use of:

   a. Memorization
   b. Freudian psychology
   c. group dynamics
   d. faculty psychology
   e. experimentation

59. Which of the following is not a group process method:

   a. small group discussion
   b. panel method
   c. class play from Shakespeare
   d. committee method
   e. socio-drama

60. In which of the following is drill NOT effective in learning:

   a. geogetry originals
   b. biological terms
   c, the alphabet
   d. multiplication combinations
   e. spelling

61. A good review should have opportunity for all but one of these:

a. reorganization of learnings
b. focus on specific unit at hand
c. locating weaknesses of learners
d. integration or transfer of concepts
e. initial learnings of the unit

62. Reference materials should be listed in study guide for a unit because:

a. pupils can then locate it by themselves
b. teacher is free to work with slow learners
c. class grouping can be facilitated
d. textbooks are sufficient
e. a film will tell the story of a unit

63. A technique for obtaining a cooperative classroom climate is to

a. build up competition
b. have a system of rewards
c. supervise both group and individual work
d. pick all A students as group leaders
e. scatter students according to intelligence

64. In selecting a textbook for a semester's class use all but one of these criteria:

a. look at sale price
b. list major objectives
c. check vocabulary level of difficulty
d. check accuracy of information
e. read text catalogues

65. Which of these classes would be least likely to use a tape recorder:

a. English
b. science
c. mathematics
d. French
e. history

66. Which of the following is not a member of the group of five basic study skills:

a. surveying a task to secure an overview
b. exploring wide ramifications of content
c. getting started to work quickly
d. concentrating on work until it is finished
e. getting meaning from the work

The Patrick Unit (a method of organizing subject matter and a method of organizing teaching) has these steps given in order:

Exploration	Preparation
Motivation	Presentation
Overview of Problem	Resultant Action
Organization	Evaluation

Select the best synonym or expression from each term or expression:

67. Exploration

    a. assignment of chapter
    b. what should be studied
    c. search for new problems
    d. elimination of large units
    e. case study

68. Motivation

    a. moving story
    b. psychological drives
    c. dramatic approach
    d. compulsion
    e. Problem to be solved

69. Overview of Problem

    a. understandings, skills and attitudes
    b. scheme of solution
    c. review of exploration
    d. expected outcomes
    e. procedures

70. Organization

    a. set up a president
    b. get other classes to cooperate
    c. assimilation
    d. what, how, who
    e. ramification

71. Preparation

    a lecture
    b. intermediate assignments
    d. use of teacher outline
    d. digestion
    e. review

72. Presentation

a. study reports
b. use of film
c. initiation
d. teacher motivates
e. unit concluded

73. Resultant action

a. assimilation
b. correlation
c. apprehension
d. fusion
e. application

74. Evaluation

a. grades
b. objectives
c. prizes earned
d. teacher comments
e. standard tests

75. In further developing the action of this unit which would you do

a. read case study
b. have teacher review important but untested implications
c. have a list of possible solutions
d. call for class debate
e. use standard tests

76. The fifth step in the modified Morrison Plan is

a. exploration
b. presentation
c. organization
d. assimilation
e. recitation

77. As the unit progresses the teacher should:

a. become more definite about committee tasks
b. have other related teachers correlate their work with your unit
c. schedule laboratory periods as separate work times
d. give helpful outlines to students
e. state your conclusions as a teacher

78. A teacher can get skills from a previous unit transferred to the present unit by:

a. mental discipline
b. citing common experiences
c. use of reference materials
d. use of drill
e. use of films

79. Near the end of a unit it may be most fitting to:

a. drillon salient points
b. study all contributions and publish best efforts
c. call parents in for conference
d. criticize student work
e. have a social hour

80. The chief characteristic of the Socratic method is the

a. leading question
b. argument
c. debate
d. discussion
e. pupil-teacher planning

81. A unit is a:

block of subject matter
b. a central theme around which teaching is organized
c. the common elements of general education
d. curriculum for democratic experiences
e. fusion of disciplines

82. One of these is a characteristic of the core curriculum:

a. uniform state course of study
b. emphasis on life problems
c. contract method of teaching
d. subject matter homogeneity
e. science centered

83. A concept is taught by many steps, one of which is:

a. contrasting illustration
b. absorption
c. drill
d. memory
e. exercise

84. Peter insists on answering all the teacher's questions to the class in a dominating voice. The teacher should:

a. rotate questions to specific children
b. put Peter in his place
c. send Peter to the office
d. stop asking questions in class
e. encourage Peter to talk it out

85. Lydia in her report for science carefully copied long quotes from science books as her entire report:

a. discuss matter in private with Lydia
b. tell class how to handle quotes
c. ask class to criticize Lydia
d. review with class the merits of interpreting the writings of others
e. give Lydia a good comment

86. Joan has difficulty seeing the blackboard:

a. give her a front seat
b. arrange for glasses
c. give her individual attention
d. encourage her in school work
e. have her sit with Amy

87. William when asked to give his book report to the class was clearly unprepared, at the end of his report

a. tell him he has a zero for the report
b. tell him to see you after school
c. ask class for comments
d. arrange to connsel him
e. report him to guidance counsellor

APPENDIX

EVALUATION OF A-V AND RELATED OBSERVATIONS that you made as part of class activity

Motivation: You receive credit for your opinion as it agrees with your professors' records of course coverage

NAME____________________

YOUR PROFESSOR____________________

DATE____________________

Circle appropriate number giving your opinion

Purpose of film viewed or observation that was made	not observed		observed and just satisfactory		fully observed very satisfactory		
a. Provision for individual differences	1	2	3	4	5	6	7
b. demonstrated unit teaching							
c. teaching of a mental skill							
d. teaching for creativity							
e. pupils as teacher helpers							
f. handling controversial issues							
g. use of project teaching							
h. demonstrating a review lesson							
i. teacning a concept							
j. pupil discussion							
k. laboratory teaching							
l. handling discipline							
m. understanding drop outs							
n. use of A-V materials							
o. pupil committees in class							
p. the art of questioning							

Evaluation of A-V (continued)

q. developing an assignment

r. inductive-deductive teaching

s. teaching current events

t. multiple-text approach

u. diagnosis of pupil
 differences

v. methods of beginning
 a lesson

w. pupils' work as basis
 for grammar

APPENDIX

ESSAY TEST

Please read carefully all words or phrases listed below. After reading, write a sentence following each word using the word in its appropriate meaning in educational methods. On reverse side select four of these words and put them in one meaningful paragraph.

NAME________________________

PROFESSOR___________________

DATE________________________

1. Pre-class preparation

2. Teaching for transfer

3. Inductive method

4. Handling discipline

5. Cone of experience

6. Evaluation

7. Unit teaching

8. Teaching controversial issues

9. Drill

10. Lesson plan

APPENDIX

THE PENNSYLVANIA STATE UNIVERSITY
COLLEGE OF EDUCATION, DEPARTMENT OF SECONDARY EDUCATION

Procedures for use of Student Teacher Evaluation Check Sheet
1961-1962

Introduction: We believe that techniques of teaching are important and we believe that they can be measured. The following is an outline of a good way to develop certain techniques of teaching. It is presented here in order that evaluations of all student teachers will have a common base. It is expected that the cooperating teachers and university supervisors of student teaching will familiarize themselves with the definitions listed. These definitions with the releated check sheet will be used as one means of evaluating student teachers.

It is obvious that to evaluate how well and how often specific techniques have been used, the evaluator must frequently observe the person evaluated.

It is hoped that the evaluations will be objective, frequent, and based upon the specific technique under consideration and not on the extent to which the student teacher conforms to the general tone of the classroom of the cooperating teacher.

TEACHING TECHNIQUES AND THEIR JUDGEMENT BASES

Diagnosis of Achievement: Through informal test; by chalk board or seat work observation; or by standardized test; the teacher learns the degree of accomplishment of the individual class members and indicates the next step for each of them. Uses diagnosis as a basis for different assignments. Example: rules of grammar, use of decimals, historical sequence, chemical equations, depth of reading. We must know where the pupil is in order to teach him.

Learning Fundamentals in Context: The pupil should make corrections in the circumstances where errors are made. It is best to use errors in pupils' work as a basis for improved grammar and spelling. It is good to review English in typing. It is good to review many skill areas in the activity of social studies. Learning is far more effective if it takes place in the context of use and not in isolation--either of time or place.

Procedures for use of Student Teacher Evaluation (con't)

Teaching a Concept: In teaching, education takes place when there are new ideas discovered or modification of old ones on the part of the pupil. Steps in the teaching of a concept are: (1) Referent, establishes a basic referent through recall of previous experiences. (2) Symbol, identify correct word symbols. (3) Generalization, develop multiple illustrations for generalization. (4) Contrast, develop contrasting illustrations for discrimination. (5) Summarize, derive an organized, summarizing statement. (6) Use, provide opportunity for use of concept. This six-step procedure can be used in any subject area. Some concepts: Jacksonian Democracy, Pi as a function of a circle, Boyles Law, Neatness in typing, change of chemical state.

Teaching a Mental Skill: Much of a teacher's work involves instruction in a new mental skill. Examples: solving simultaneous equations, spelling, reading a slide rule, punctuation, writing a speech or acquiring new vocabulary in any area. The steps in teaching a mental skill are: (1) meaningfulness, develop meaning and understanding in the material to be learned. (2) Demonstration, demonstrate the correct procedure. (3) Isolate, isolate the difficult parts and practice intensively. (5) Integrate, integrate these parts into the complete procedure. (6) Drill, or work in context.

Teaching by the Inductive-Deductive Method: The discovery of the principle or the application of principle from many specific facts or observations, the method may be used in many subject areas.

The Inductive Process has three steps (1) observation, pupils are led through a series of observations of specific facts. (2) Organization, pupils organize the data or evidence in written form. (3) Statement, the verbal statements of the principle are derived.

The Deductive Process starts with a principle taken from a text or authority and the pupils apply this in their work.

Problem Solving as a Teaching Method: This ability, problem solving, needed in the world at large, can be used as a teaching method. To teach by it there are five steps (1) Concern, lead pupils to develop a concern about an important problem (2) Definition, define the problem. (3) Organization, organize the material. (4) Hypotheses, formulate tentative hypotheses (5) Evaluate, evaluate hypotheses through trial, analysis and logic.

Procedure for use of Student Teacher Evaluation(con't)

The Unit Method: This method of teaching has gone through many phases. One famous one was that developed by Morrison. A later operational unit has been described by Patrick.The unit method applies to larger concepts or inclusive concepts drawing on a considerable body of knowledge. The unit brings the facts together and encourages understanding because of the activity and analysis present. The steps in teaching the Patrick unit Method are: (1) Exploration, with pupil-teacher participation,topics for study are reviewed. (2) Motivation, the topic most central to pupil interest or need is selected. (3) Overview, the class makes a general study of topic selected to see where special interests or areas of study might be located and to decide upon the general extent of the unit. (4) Organization,the class organizes in committees for assignments to start work on topic selected, and develops a general outline of the subject to be covered. (5) Preparation through reading, assignments, library, outside resources, the pupils prepare themselves in area of responsibility. (6) Presentation, through oral, visual and written reports to the group so that all may learn from special preparation by individuals or groups (7) Action, as the result of the study some group action is taken; conference, letters, exhibit, file, people involved. (8) Evaluation, at the conclusion there should be a review to see what was accomplished This may be written, oral or in test form. It may start a new unit by disclosing weaknesses or areas important but neglected. Evaluation takes place throughout the unit as pupils work on objectives

Teaching for Creativity: One of the joys of teaching is to so teach that pupils will be constructively creative in their work. Teachers who can do this frequently have (1) Good rapport with pupils. This is a combination of respect and good communication. (2) The ability to motivate by use of ideas, imagination or stimulation of voice and picture or presentation. (3) The sense of criticism or self-criticism which will evoke but not inhibit creative activity, art to botany,chemistry to history. (4) Provide time for creative activity.

The Meangement of a Review Lesson: A review, it should be another view of the work to be covered.

All classes need to have reviews to firmly fix or organize the outcome of previous class work. Important in review are (1) the relationships of topics reviewed to original objectives, (2) the pupil participation indicating knowledge functionally learned, (3) the adequacy of illustrations or examples from the material previously covered. Remember that it is the pupils who need the review, not the teacher.

Procedure for use of Student Teacher Evaluation (con't)

Teaching Current Events: In science as well as social studies there are current events. These provide opportunity for identification with topics of class study and auxiliary instruction in vocabulary. The student presentation of current events reinforces concepts of class activity and creates possibility for revived or new interest in subject of class.

Audio-Visual Aids include: the uses of chalk boards, bulletin boards by pupils or teacher, pupil-made pictures and graphs; film strips, still pictures, motion pictures with and without sound, posters, charts, audio tapes and records. The teacher prepares the pupils for the audio-visual and the teacher uses it efficiently, he spends appropriate time in its use, he reviews the contents of the aid at the appropriate time.

Pupils Involved in the Learning - actively. They learn to do by doing. The teacher uses lecture and other teacher-dominated class procedures to a minimum. Much of the teacher's time is spent in directing the learning of individuals and small groups within the class.

Teaches for Transfer - The ability to utilize in new situations what is previously learned. The teacher makes sure that the pupils understand what has been taught; that they generalize the understanding; that they deliberately apply their learning to solving practical problems in new situations.

APPENDIX

THE PENNSYLVANIA STATE UNIVERSITY
COLLEGE OF EDUCATION, DEPARTMENT OF SECONDARY EDUCATION

Check Form for Evaluation of Student Teachers
1961-1962

To the Evaluator: We believe that techniques of teaching are important and we believe that they can be measured. This instrument is an attempt to measure the quality and the quantity of some important techniques which the student teacher may or may not have been taught.

It is obvious that to evaluate how well and how often specific techniques have been used, the evaluator must freuqently observe the person evaluated.

It is hoped that the evaluations will be objective, frequent, and based upon the specific technique under consideration and not on the extent to which the student teacher conforms to the general tone of the classroom of the cooperating teacher.

Name of Observer____________________________________

Name of Student Teacher Observed______________________

Subject Taught______________________________________

Review description of teaching techniques whenever you feel the need.

In the sections below there are three major columns to consider:

I. Teaching Technique	II. Frequency of Use	III. Quality of Use
This column lists in outline form, the major teaching techniques and their characteristic parts. The over-all technique will be judged for quality of student performance. In Column III, with the ranking system provided indicate your over-all impression of the quality of each technique. Then indicate frequency of use of sub-items under Column II, and their quality under COL.III	The term commonly(C) means that it is generally used when the technique is employed. Sometimes (S)means that the item is occasionally used when the technique is employed. Never(n) means not used or not observed in this technique.	If the technique is used extremely well, mark the item 1. If it is better than the average, use a score of 2. Average practice score 3, below average 4,score 5 if there is doubt that any pupil benefit was derived.

Check Form (continued)

I. Teaching Technique

Frequency of Use — Quality

C S N — 1,2,3,4,5

1. Diagnosis of Achievement

student teacher observes pupils working at chalkboard or desk
uses teacher-made tests for diagnosis
plans for differentiated techniques in relationship to differences discovered

2. Teaching fundamentals in context

has periodic criticism of student work
has class practice on errors discovered in student work
subject materials used for class exercies and drill are of intrinsic value

3. Uses the steps in teaching a concept

referent
symbol
generalization
Contrast
Summarize
use

4. Teaching a mental skill

develops meaningfulness
teacher demonstrates
pupils practice
isolates difficulties
integrates parts
meaningful drill

5. Teaching by Inductive-Deductive Method

Inductive Process
a. observation
b. organization
c. statement

Deductive process

Check form for Evaluation of Student Teachers
(continued)

I. Teaching Technique

Frequency of use C S N — Quality 1,2,3,4,5

6. Problem Solving Method

develops concern
makes definition
organizes material
makes hypotheses
evaluates

7. Uses the Unit Method

Exploration
Motivation
OVerview
Organization
Preparation
Presentation
action
EVALUATION

8. Teaches for Creativity

permissive attitude to vary from routine
ENCOURAGES pupils to try new ideas
evokes self criticism
directs stimulation to create
provides time to create
praises pupils8 creations
teacher is creative in
  a. methods
  b. subject matter of course

9. Management of review lesson

relationship of topic
pupil participation
adequacy of illustrations or examples by pupils

10. Teaches current events

auxiliary instruction
reinforcing purpose
new or renewed interest

Check Form for Evaluating Student Teachers
(continued)

I. Teaching Technique

Frequency Quality
of use
O S N 1,2,3,4,5

11. Uses of Audio-Visual Aids

bulletin board
chalkboard
movies, slides, opaque projector
maps, charts, graphs
other aids
class is prepared for A-V
A-V is integrated into classwork

12. Pupils take reponsibility for finding and preparing materials, organizing reports, leading discussions, serving as critics

13. Teacher for Transfer

within the subject
from one subject to another
from subject matter to current situations

14. Does your student teqcher use the words which are the subject matter of the items of this check sheet:
  a. when discussing teaching problems
  b. in his lesson plans

In order to get a complete picture of the techniques used by the student teacher being evaluated by this instrument, other techniques listed below, in quality and quantity as indicated, have been observed by me during the student teaching period.

Signature

APPENDIX

THE PENNSYLVANIA STATE UNIVERSITY
COLLEGE OF EDUCATION, DEPARTMENT OF SECONDARY EDUCATION
NOVEMBER 1961

SUPPLEMENTARY RECORD OF STUDENT-TEACHER ACHIEVEMENT(short form)

Name of student teacher____________________________

Date______________ ____________________________

Name of cooperating Teacher________________________

DOES THE STUDENT TEACHER:	NO	IF YES QUALIFY A,B,C
1. Use pupils as helpers i.e. secretary for board work?		
2. Have something to get class going as soon as pupils come into the room?		
3. Have pupils stand up when they make reports?		
4. Have pictures or other graphics in demonstrations to whole group?		
5. Have pupils do experimenta or demonstrations before the whole class?		
6. Have class participation in a project taking more than a day?		

IN YOUR OPINION WAS THE STUDENT TEACHER PREPARED TO DO THE FOLLOWING THINGS AT THE START OF THE STUDENT TEACHING PERIOD?

1. Make Lesson plans?____________________
2. Organize resource materials for unit?____________________
3. Lead a discussion?____________________
4. Present a topic?____________________
5. Carry on a class period of give and take(criticism)?______
6. Teach a controversial issue?____________________
7. Do classroom housekeeping?____________________
8. Collect and distribute class materials efficiently?______

Supplementary Record of Student-teacher Achievement
(Continued)

DOES THE STUDENT TEACHER	No	IF YES QUALIFY A, B, C
9. Use art of questioning?		
10. Give assignments at right time?		
11. Organize groups into committees?		
12. Use the chalk board?		
13. Plan and use bulletin boards?		